

# THE IRON AGE

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# THE IRON AGE

New York, Thursday, May 2, 1907.

## An Example of Recent Factory Construction.

The Automobile Works of the White Company, Cleveland, Ohio.

BY ROBERT I. CLEGG.

The parent stem of the White Company of Cleveland, Ohio, is the White Sewing Machine Company, which has been engaged in the manufacture of sewing machines for somewhere in the neighborhood of 35 years. When the bicycle furore was strong the factory was engaged also in the production of these machines. That branch of the business was disposed of before the popular interest in the "wheel" had waned. For a half dozen years the

plant a year ago. The site is close to the entrance to Gordon Park, and two rows of fine elms line out an attractive avenue along the eastern side of the company's property. The main line of the Lake Shore & Michigan Southern Railroad Company's system bounds the tract on the north and a spur track leads directly to the factory. Some of the work is still done at the old plant, but there are ample facilities at the new shops and additional

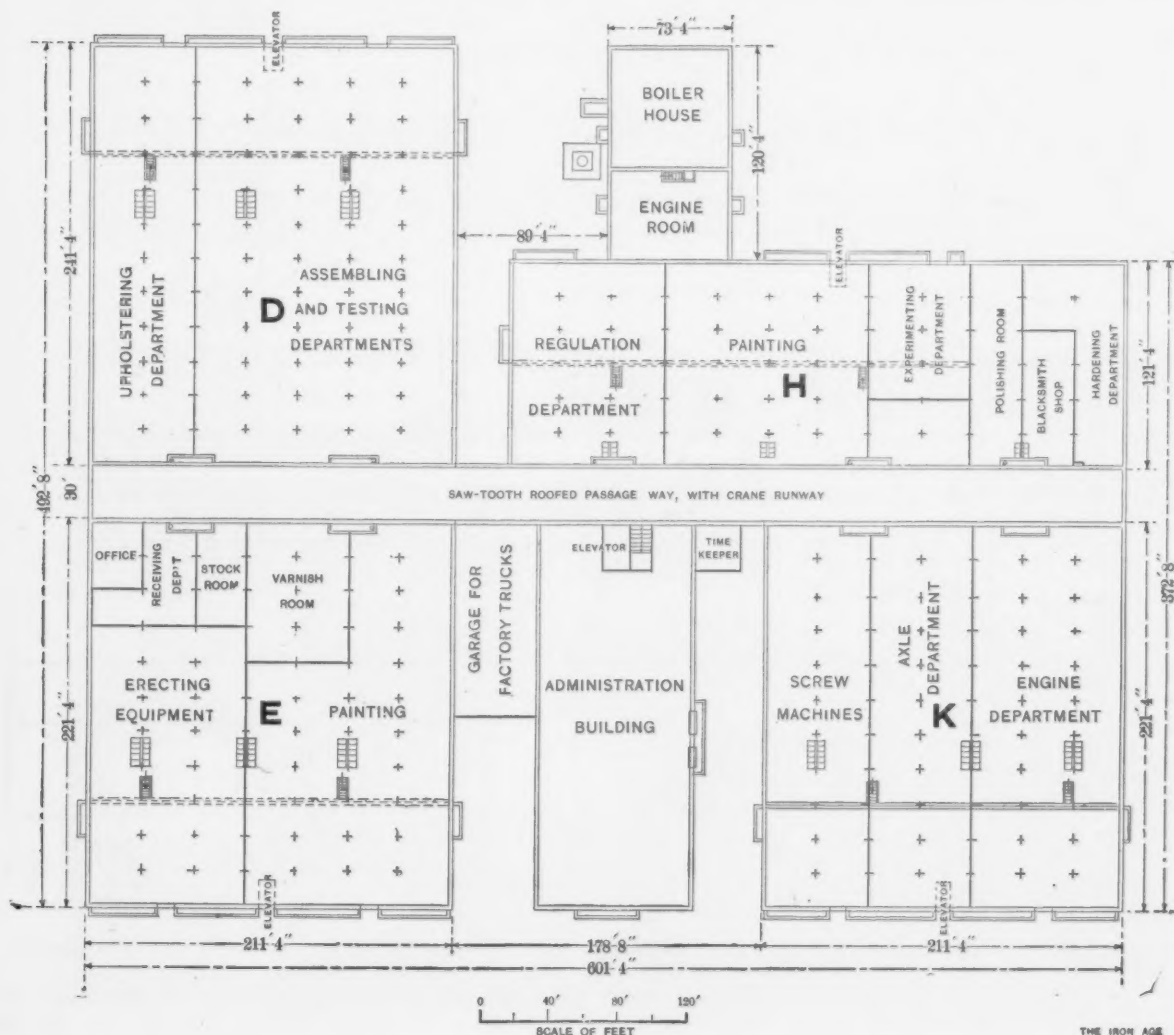


Fig. 1.—Plan of the New Automobile Works of the White Company, Cleveland, Ohio.

plant has had the important addition of that variety of automobile which is manufactured under the patents of Rollin H. White. The machines built in the season just passed reached the very respectable total of 1500. Obviously the imposition of this load on the manufacturing facilities of the old plant rendered further developments absolutely necessary. Accordingly a site of some 30 acres was secured immediately adjacent to the magnificent city park system and about 3 miles east of the "Square," or nominal center of the downtown business section of Cleveland. Ground was broken for the new

space for future extensions is provided. In all about 1000 men are employed.

At the present time there are four main buildings and a power house. An administration building, six stories high and 90 x 220 ft., will stand between two of the factory units now in use. The engineering department is temporarily accommodated in what will later become the fourth of the long locker rooms—one for each building. The office force is necessarily divided and one section is installed for the present in a factory department, while another is at the company's downtown

headquarters. Fig. 1 gives the situation plan of the works and indicates the various departments. Fig. 2 is an elevation of the front or Seventy-ninth street side of building E.

#### Features of Construction.

The factory structures are units of single story, saw tooth design. Their pleasing uniformity contributes much to the general effect of the plant, and coherence in the assembled buildings will be preserved in additions required in the future. Another pair of factory units can find a place at the south of the present buildings, and four such additions may be placed in the northern portion of the property. The structures as at present in operation have a frontage of over 600 ft. at the Seventy-

several units are designed to preserve a certain individuality and are separate the one from the other. The space between the buildings leaves a court or alley 30 ft. wide, and this is covered with a saw tooth roof 21 ft. 7 in. in the clear. This 600-ft. corridor or main artery of the factory system is spanned by a traveling crane 17 ft. 7 in. above the floor. The floor is of concrete and has a slight pitch from the sides to the center in order to care for drainage. While the various buildings draw their supplies quite largely from the basement warehouse under each of them, the court or corridor serves admirably for the transit under cover of material in process of manufacture, for the reception of factory raw material, &c. The frequent use of the corridor for the passage of



Fig. 2.—Front Elevation of Building E, on East Seventy-ninth Street, N. E.

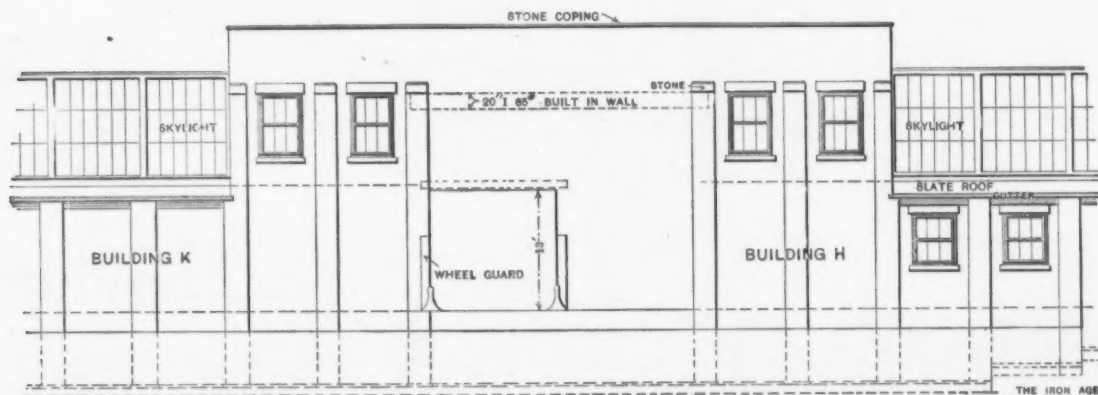


Fig. 3.—End Elevation of Second-Floor Locker Rooms and of 30-Ft. Passage Between Buildings H and K.

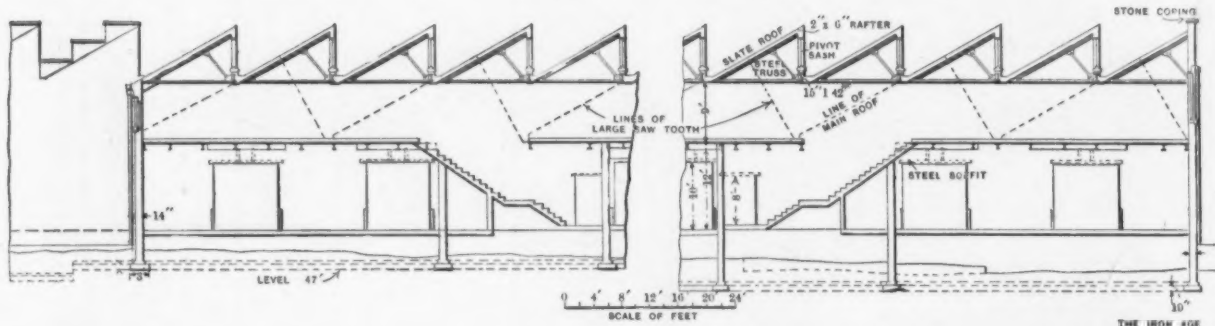


Fig. 4.—Part Elevation of Wall of Building H on the Side of 30-Ft. Passage, Also Section of Locker Rooms on Second Floor.

ninth street side. Each of the factory buildings has a basement 60 ft. wide and running the entire length of the building.

The buildings are of brick, with stone coping and trimming and a roof of slate. A light framework of steel supports the roof on iron columns and the ceiling is laid on metal laths. The several departments in each building are separated by sheet metal partitions. These do not extend the entire distance from floor to roof, but are topped with a wire screen. In the testing department and in the basements, as well as other places where oil and water may be thrown about the flooring, concrete is employed, but in many of the factory departments the floor is laid with maple. The shops appear abundantly proof against all fire risks and the company carries its own insurance.

As will be seen from an inspection of the plans the

automobiles and their examination and adjustment prevents the accumulation of stock or junk, and the convenience of the arrangement would readily appeal to any manager. The entrances to the respective departments and the stairs leading to the locker rooms and drafting department—four long second-story rooms adjoining the 30-ft. court—are all at the level of this passageway, and it is so arranged with reference to the other sections of the plant that no one can visit any locker room without the knowledge and permission of his foreman. Fig. 3 presents an elevation of the wall at the end of the 30-ft. passageway and of the second-story locker rooms on either side. Fig. 4 is an elevation, for the most part in section, of the side wall of the corridor and gives a longitudinal section of the locker rooms of building H.

Lavatory and toilet facilities are of modern finish, in porcelain, nickel and slate. The shop drinking fountains

are of the cupless type, a jet of water springing up from a porcelain stand. A complete installation of these comfort quarters is provided in the center of each of the main buildings. The toilet provisions in the automatic machine room are shown in Fig. 5. Washing facilities and lunch tables are provided in the locker rooms. Every foreman has a comfort room equipped with lavatory and toilet facilities near the entrance to each department.

The electric illumination is also noteworthy. Each of the four main buildings has its own transformer, the voltage being changed thereby from 440 to 110. These transformers are of 50 kw. capacity. In the 30-ft. space between any four of the roof supporting columns is a cord box attached to the ceiling. Each cord box has from two to six sockets, and all are in communication with the transformer of the individual buildings. The Gem in-

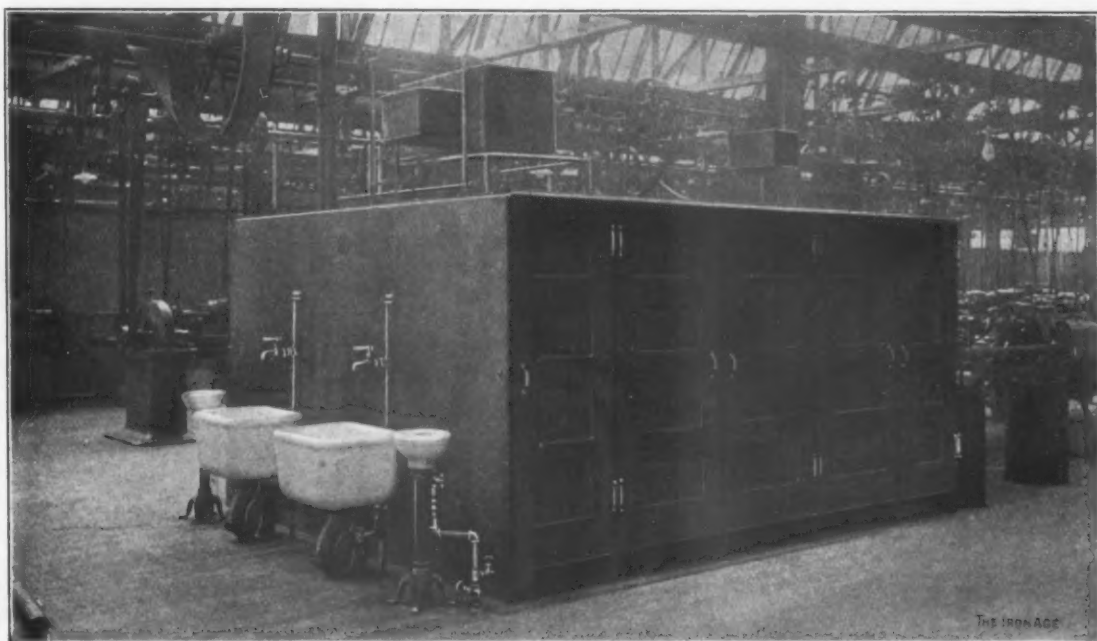


Fig. 5.—Lavatory and Toilet in Automatic Machine Room.

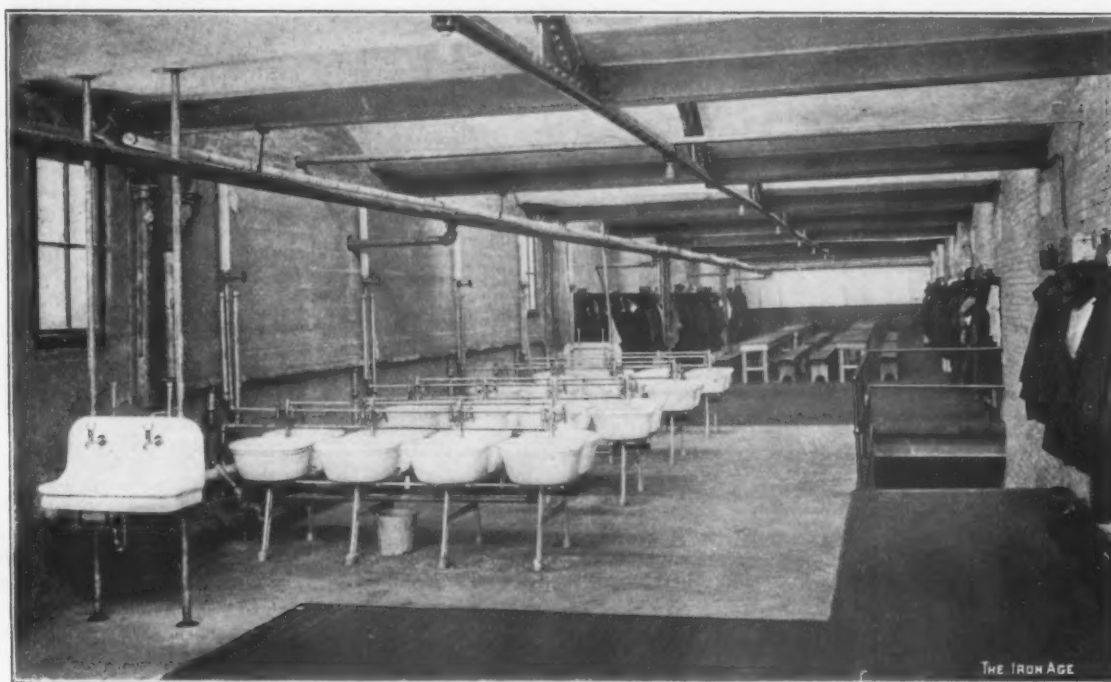


Fig. 6.—One of the Men's Locker Rooms.

Fig. 6 gives a view in one of the locker rooms before the lockers were installed.

#### **Skylights and Electric Lighting.**

The lighting of the plant is excellently contrived. The main buildings are 12 ft. in the clear, with the supporting columns of the roof framework 30 ft. from center to center. The roof members are of light construction and interfere but little with the flood of light through the spacious area of glass overhead. The skylight has a northerly exposure. In each saw tooth it is some 13 ft. wide and extends the whole of the distance across each factory unit. Fig. 7, a view of the axle department, illustrates the excellence of the provision for light.

candescant lamps have ribbed glass reflectors. Every 30-ft. section of each bay has one or more of these lamps suspended in it, but as will be seen the additional sockets available in the cord box overhead provide for a considerable and easily obtainable increase in the supply of illuminating power.

The suspension of the electric lamps is not only flexible in amount of illumination, but is effective in other respects. The cord leading to the lamp is inclosed in an iron pipe. A bracket is attached to one of the I-beams and the length of pipe slides through a hole in it, being readily adjusted for height by a set screw. The lamp suspension over the machines has a pivoted cross



arm at the lower end of the supporting pipe, and this enables the workmen to direct the light where most required in their work. Of course the overhead bracket can be readily moved to any part of the beam that happens to be most convenient. The universal joint at the lower end of the pipe and the sliding connection with the supporting bracket permit each man to apply his light as he may elect.

Shops are not uncommon where the unprotected wires leads to risks of fire or to the dissipation of electrical energy through leakage. The supporting cord, where the connection is made with a too convenient length of wire, may be tied close to a water, steam or gas pipe, a part of a machine or some other metal fitting. While the components of the White factory buildings are about as nearly fireproof as it seems practicable to make them,

operation to another the storage spaces of the factory must be liberal indeed to keep up with the daily output of eight machines.

#### Power Equipment.

The power house is divided by a curtain wall of brick into a boiler room, 70 x 70 ft. 4 in., and an engine room, 73 ft. 4 in. by 50 ft. The boiler room has two Babcock & Wilcox boilers of 300 hp. each. These are equipped with automatic chain grate stokers. The fuel is brought in over a spur track, which passes directly over the coal pile within the building. An oval track carrying a set of buckets will electrically hoist the coal from the pile and deliver it on the grates at the boilers. At the south end of the engine room there is an 18 x 35 x 36 in. compound engine of 750 hp., built by the Erie City Engine Works. This is direct coupled to a 500-kw. generator of



Fig. 7.—Axle Department.

yet the construction is a double safeguard against undue liberties of the fluid.

The overhead steel work is not only a handy means of supporting the lighting apparatus, but is also used for hanging countershafts, as well as main shafting. Many of the I-beams serve as support and trackage for small hoists, of which there is a liberal supply, as in the engine department, shown in Fig. 8.

#### Storage Facilities.

Concrete stairways lead from the basement, but for the transfer of material there are four large elevators. These have each an area of 8 x 16 ft., and will carry a load of 10,000 at a speed of 30 ft. per minute. They are operated by electric motors of 10 hp. The basements are largely used as storage for the departments of the building immediately over them. Work that must be stored temporarily in its factory progress comes to a halt in the basement. The automobile bodies are of this kind. They are made of aluminum, the metal sheets being held together and inclosed by frames of wood. The operations of filling, rubbing, painting, striping, varnishing, &c., require from six to eight weeks and considerable time is demanded for drying. During the intermission from one

the General Electric Company's manufacture. A Northern traveling crane of 15 tons capacity and 50-ft. span commands the engine room, and will be in requisition not only for repair work, but in the installation of future equipment. Another pair of 300-hp. boilers will be put in, and there is also to be added a 1000-kw. generator as well as a 150-kw. machine for night service.

Each length of line shaft throughout the factory has its own motor, which in each case is applied at as nearly as possible midway of the line shaft it serves. About 60 motors are in use, and these range from 5 to 50 hp., some being direct connected, as in the plating apparatus of the polishing room and other machinery.

#### Some Manufacturing Methods.

Multiple drills are freely used in the work of the shops, the numerous holes in steam chests and cylinder covers permitting these operations to be conducted with the rapidity of many tools acting simultaneously and with jig-like accuracy. The machinery equipment also comprises many large automatics. The ball races are made up to 5 in. in diameter and cut from the solid bar. Liberal use is made of trucks of all sizes. As far as possible all work is kept off the floor and on wheels. Ample

as the supply appears to be, a couple of men are constantly engaged in making trucks. Metal racks are used for holding supplies and small parts.

Natural gas is employed in the brazing operations of the blacksmith shop and the four furnaces of the hard-

power plant of the White steam car. The four hardening furnaces are connected with thermocouples to a four-way plug connection and an Engelhart gauge or pyrometer, and the workman may thus readily ascertain and check the temperature of any or all of the furnaces.

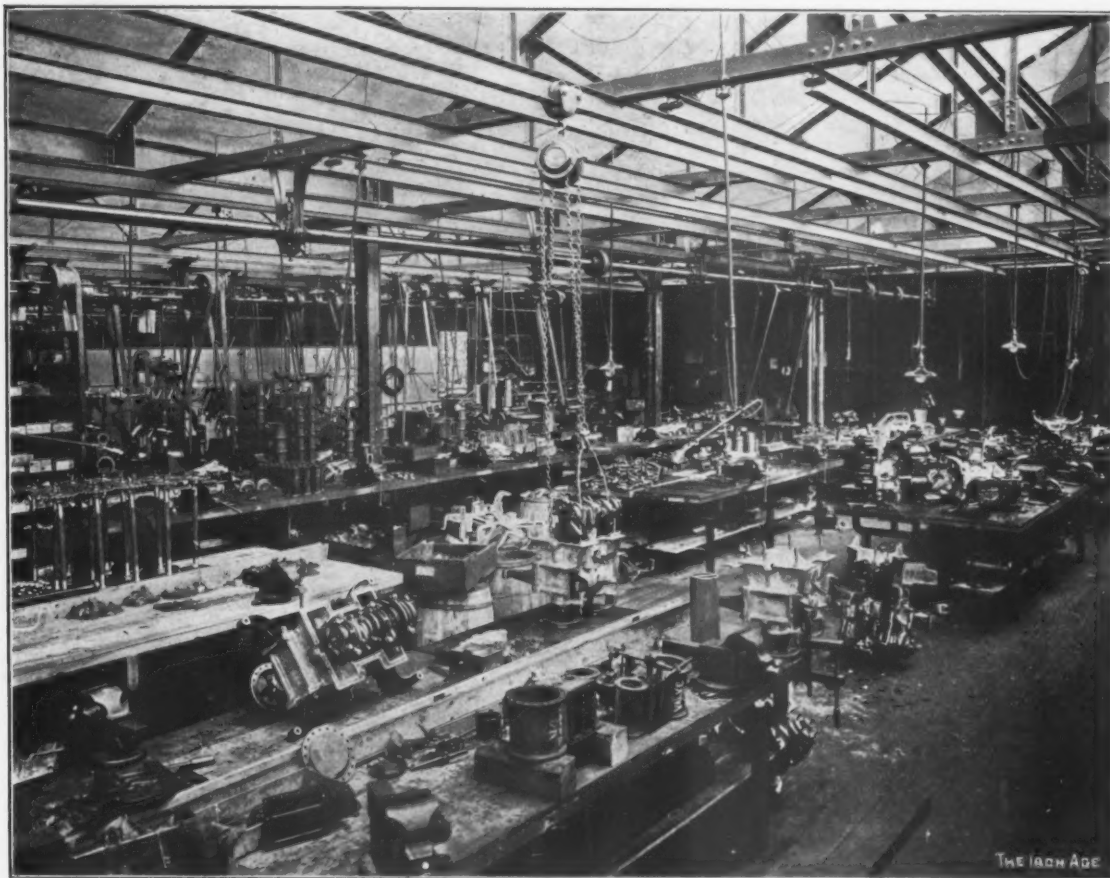


Fig. 8—A View in the Engine Department, Showing the Use of Trolley Hoists.



Fig. 9.—Testing Rack.

ening department. It is also used in testing and regulating the thermostats that form an interesting and essential part of the White automobile. A description of this device and its operation was given in the recent paper contributed by Prof. R. C. Carpenter to the American Society of Mechanical Engineers, which deals also with the

The workmen on the assembling floor are divided into gangs of eight. Each man takes an automobile and does the same work as the other seven in the same gang. On completing that task and starting on another lot of eight machines the men also change their series of operations and another gang assumes the work they have been doing.



This rotation of work is the rule, and every man in each gang is thus equally competent on any part of the assembling room practice.

sentials. The body is added in another department, and road tests are given by still another force of men. At the testing rack in the assembling room, shown in Fig. 9,

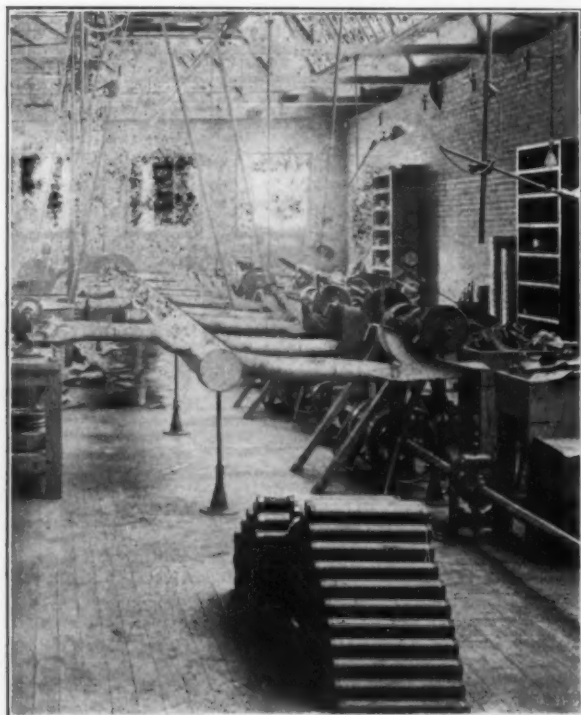


Fig. 10.—Polishing Room.



Fig. 11.—Engines in Assembling Room.—As in Other Departments, Work Is Kept on Trucks.

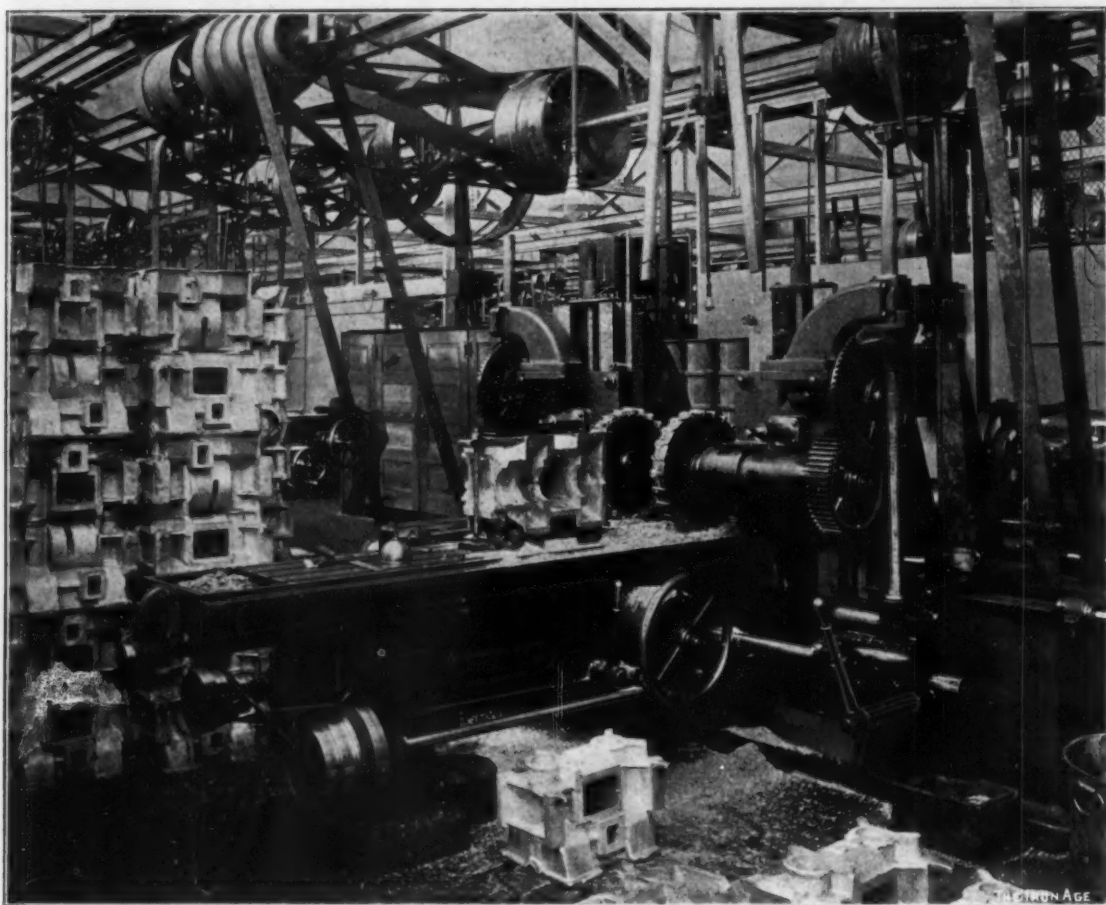


Fig. 12.—Milling the Aluminum Beds for the White Automobile Engines.

#### Assembling and Testing.

As the machines are assembled they go to the testing rack, but stripped of everything but the power plant es-

a hood and temporary stack are dropped over the boiler and pressure is applied. The testing rack has a series of dynamos arranged along the wall, and each armature



shaft has a pulley at both ends or is elevated on the wall and driven by countershafts. Belts from these pulleys lead to the tires on the rear wheels of the adjacent automobile, which is slightly elevated above the floor, so that the wheels turn free. A bank of incandescent lamps is in circuit with the dynamo, and thus the automobile power plant can be put under test as rigorously and accurately as though it were undergoing road work, and, of course, with much greater convenience for the operative. The number and brilliancy of the lamps as the machine is

cations of all the cities and towns, shows the rivers and the several railroads, and in a general way conveys much valuable information regarding this exceedingly busy section of the country. The Chamber of Commerce has also issued a brochure, which gives statistics relating to the quantity of materials of various kinds annually handled in the Pittsburgh District, which is taken to comprise the territory lying within a radius of 40 miles from the heart of the city. Graphic methods of illustration are employed to show how Pittsburgh production and traffic compare

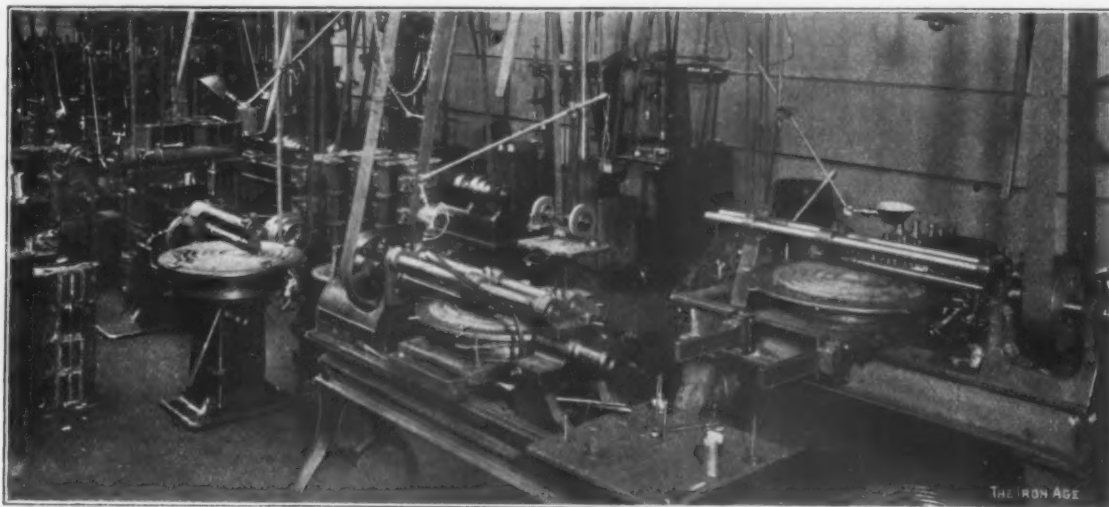


Fig. 13.—Engine Department.—Burner-Making Machines in Foreground.

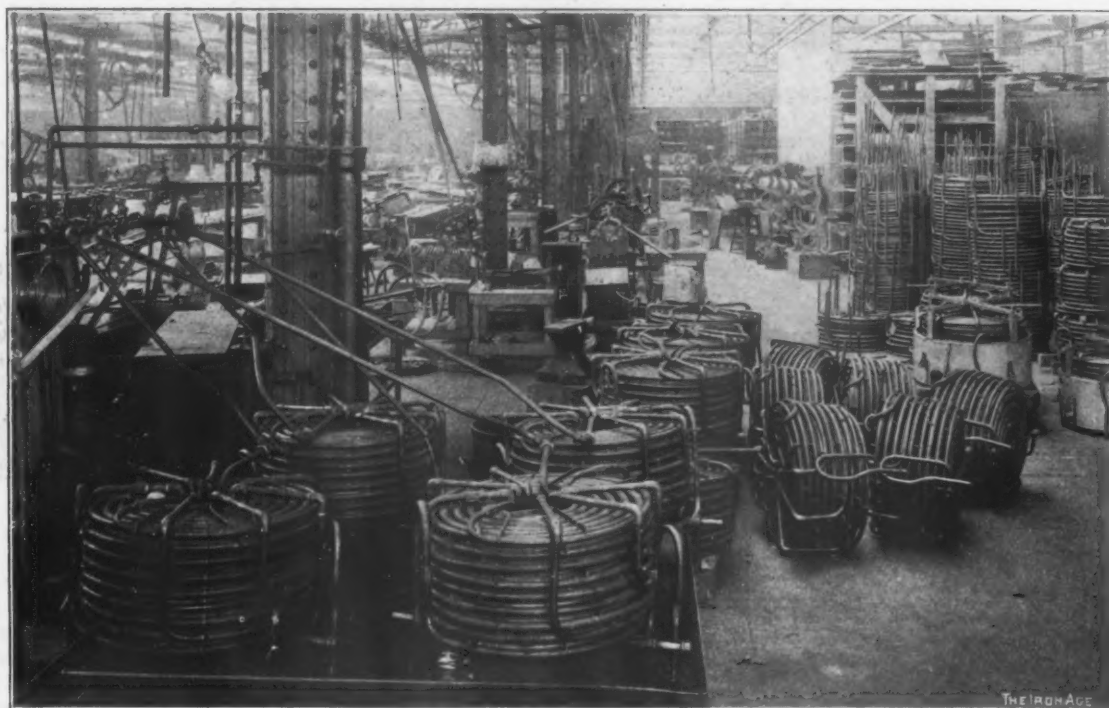


Fig. 14.—Steam Generator Department.

under test are obvious indications of the work being done by the power plant of each machine, and there is no chance for any surreptitious method to hide the actual conditions. Assuming that the machine fulfills factory demands it is forwarded to the finishing department and receives its body and complement of levers, gauges, &c. It then goes out for a road test, afterward being sent to the sales department. Figs. 10 to 14 give views in the assembling room and in the polishing, steam generator and engine departments.

The Chamber of Commerce, Pittsburgh, Pa., has issued a relief map of Pittsburgh, Allegheny and vicinity, which is based upon data of the United States Geological Survey. The map shows the topography of the district, gives the height of the principal elevations in feet, marks the lo-

with totals for the United States and with foreign countries.

The Western Electric Company has opened a supply department in connection with its Pittsburgh business, with headquarters at its new warehouse at 910 River avenue, Allegheny, near the north end of the Sixteenth street bridge. This building is one whose erection attracted much attention in Pittsburgh, as it set a new mark in the building records of the city. Possession of the property was not obtained until October 5, 1906, but work was pushed day and night, and the offices were occupied February 1. It is of mill construction, consists of five stories, with a one-story shipping and receiving annex at the rear, and covers a ground space of 88 x 128 ft.

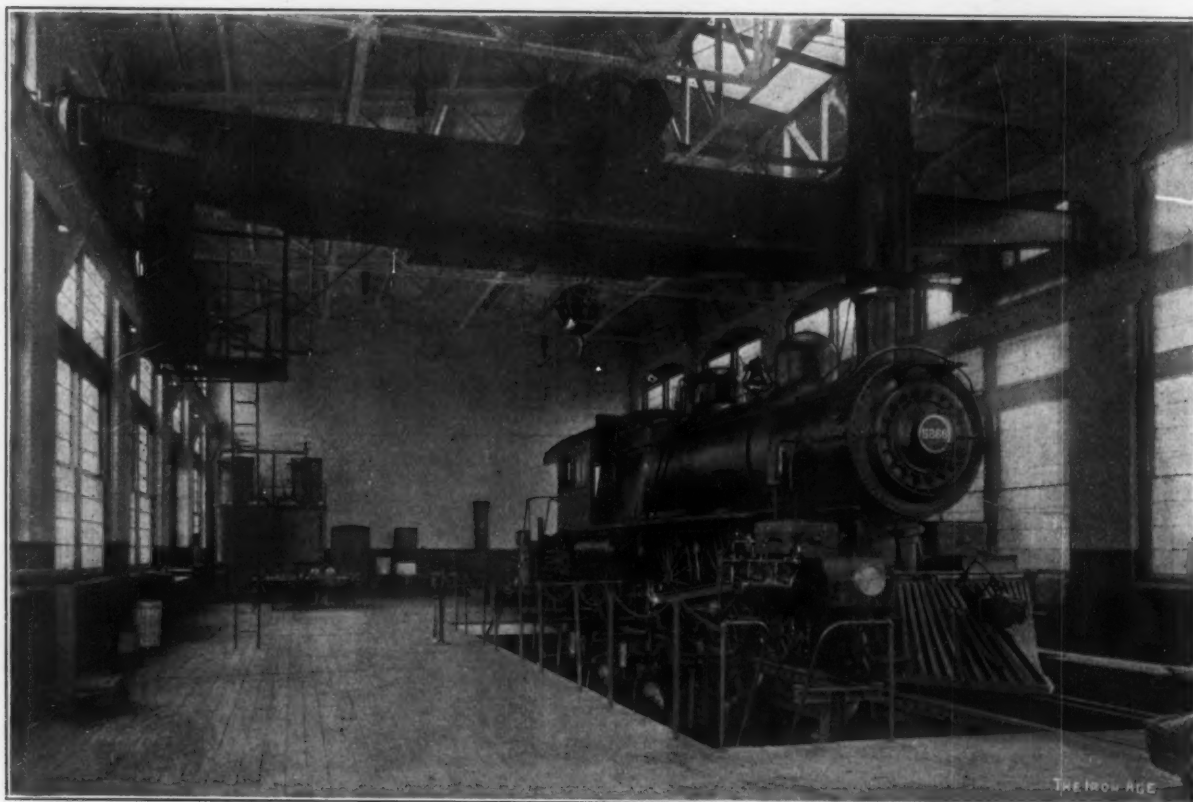
## The Pennsylvania Railroad's Locomotive Testing Plant.

The locomotive testing plant exhibited by the Pennsylvania Railroad Company at the Louisiana Purchase Exposition has been permanently installed at Altoona, Pa. Since November 19, 1906, it has been in continuous operation, and with a force of 18 men on an average three complete tests a week have been made. Certain parts of the apparatus were in the temporary exhibit, but several important improvements have been embodied in the new plant. It is now housed in a steel and brick building and a special equipment has been installed for the coal and ash handling, the bin for ashes being directly over the track used for bringing in coal.

The illustration shows the interior of the building. The floor of the laboratory is on the track level and is made in sections which can be removed by the traveling crane. The space beneath it is used for storing spare

will be directly beneath each pair of drivers. A section of special rail is next bolted to the inside faces of the supporting wheels, so that a locomotive can be backed in and the drivers will run on their flanges until in position directly over their supporting wheels. After a locomotive is in place and its draw bar attached to the dynamometer these rails are removed, leaving the drivers resting upon the supporting wheels.

The axle for each pair of supporting wheels carries an Alden absorption brake upon each of its overhung ends. Each of these brakes consists of two smooth circular cast iron disks, keyed to the supporting wheel axle, with a thin copper diaphragm on each side of each disk secured at its periphery and also at its inner edge to a housing which does not revolve and has its bearings upon the hubs of the circular revolving disks. When the stationary housing is filled with water under pressure the copper disks are forced against the revolving disks, creating friction. The surfaces of these revolving disks are continuously and uniformly lubricated and the water



Interior of the Locomotive Testing Plant at Altoona, Pa., Operated by the Pennsylvania Railroad Company.

absorption brakes, supporting wheels, &c. On the same level below the main floor is the water supply apparatus for controlling the brakes. The driving wheels of the locomotive under test rest upon supporting wheels having rims shaped to correspond to a rail head, and axles extended to carry absorption brakes. The turning of the driving wheels causes the supporting wheels to revolve, but these are retarded to any extent desired to impose a load on the locomotive, and the force exerted at the draw bar is measured by a traction dynamometer. The axles of the supporting wheels run in heavy pedestals secured to two cast iron bedplates parallel with the track and resting upon a concrete foundation. These bedplates are provided with T slots, so that the pedestals can be shifted to suit the wheel base of the engine under test. The only wheels of the locomotive which move during a test are the drivers. The wheels of the leading truck rest upon rails secured to I-beams and supported upon the same bedplates which carry the pedestals. The wheels of the trailing truck rest upon supporting wheels (which remain stationary during the test) and are carried by pedestals secured to the longitudinal bedplates.

When preparing the plant to receive a locomotive, the pedestals are spaced so that a pair of supporting wheels

flowing through the housing carries away the heat generated.

Each brake is connected with the source of water supply and the discharge pipes by flexible hose. Valves on the discharge and supply pipes are adjusted until the individual brakes each absorb their share of the work. After this preliminary adjustment the power absorbed by all of the brakes may be increased or decreased by operating a large valve in the supply main. Water for the brakes is taken from an elevated tank and a two-stage centrifugal pump driven by a 75-hp. electric motor delivers the water under a constant pressure of 75 lb. per square inch to the main header, from which branch the pipes leading to the individual brakes. The water discharged from the brakes runs by gravity into a tank beneath the floor, from which it is forced back into the outside supply tank by a centrifugal pump driven by a 20-hp. motor. The system is designed to supply a large volume of water at low pressure when running high speed tests, the apparatus being capable of delivering 900 gal. of water per minute.

The locomotive is connected to the traction dynamometer by an adjustable draw bar. The dynamometer may be raised and lowered to bring the draw bar horizontal



for various hights of locomotive draw bar attachments. To decrease the vibration transmitted to the dynamometer through the draw bar two safety bars are provided between the locomotive and the dynamometer frame. At their ends these bars have universal joints, and near the dynamometer end an oil dash pot adjustable in its resistance to motion.

The dynamometer is of the lever type, constructed upon the Emery principle, in which flexible steel fulcrum plates take the place of knife edges used in ordinary scales. As the levers are vertical instead of horizontal it has been necessary in certain cases to supply two fulcrum plates with axes at right angles, one for carrying the weight of the levers and the other for transmitting the thrust. The draw bar at its end is provided with a ball and socket joint to accommodate slight motion of the engine when running. Either a pull or thrust delivered by the draw bar can be weighed by the dynamometer.

The oscillating motion of the lower ends of the dynamometer levers is transformed into rotary motion of a vertical tube which revolves in ball bearings and carries with it a steel rod. The upper end of this rod is fastened to the upper end of the tube and the lower end to the frame of the machine. When the tube is rotated the rod inside of it is in torsion, which forms part of the total resistance of the machine. To the upper end of the tube are secured two radial arms with circular ends concentric with the tube, which through thin, steel straps translate the rotary motion of the tube into rectilinear motion of a carriage, which carries a recording pen.

Over a recording table an endless strip of paper 18 in. wide is drawn mechanically, upon which a continuous record of the test is made. The paper is driven by one of the supporting wheels with such a speed reduction that when the locomotive under test travels 1 mile on the supporting wheels the paper moves 52.8 in., giving a scale of 100 ft. to the inch upon the diagram. A datum pen marks a continuous straight line upon the paper. A traction recording pen moves across the paper perpendicular to the datum line, its distance from the datum line being dependent upon the force transmitted by the drawbar from the locomotive. The maximum travel of this pen away from the datum line is 8 in., which is effected by a movement of the drawbar of only 0.04 in., the multiplication of the recording and weighing mechanism being 200 to 1.

An integrator is attached to the traction recording mechanism, so that the foot pounds of work performed by the locomotive is automatically summed up. Five additional pens, electrically operated, are provided which normally draw continuous straight lines. One is electrically connected with a clock, so that each second is indicated by a jog in the straight line which this pen normally draws. Another is electrically connected to a roller which is rotated by the recording paper, causing the pen to make a jog in the line for every 1000 ft. which the locomotive travels. Still another is connected to the integrator and makes a jog in its line every time the integrator measures 1 sq. in. The remaining pens are used for recording such features of the test as when indicator cards are taken, &c.

The dynamometer is placed further away from the locomotive than it was in St. Louis, to allow more room for the firing platform. A steel and concrete house has recently been added, which completely incloses the dynamometer and those attending its operation, thereby protecting the working parts from dirt occasioned by the handling of coal and ashes in the immediate vicinity.

For handling the coal used by the locomotive a very complete plant has been installed. Bottom dumping railroad coal cars are run in on the track beside the building and are dumped in a large hopper directly beneath the ashbin. From this hopper the coal is carried by a bucket conveyor to two elevated reinforced concrete pockets, each having a capacity of about 50 tons. Each coal pocket is provided with a bottom cut off gate at a convenient hight above the main floor. Coal from the bins as needed is discharged through the gates into wagons holding about 1000 lb. each, which are run over weighing scales, pushed out to the locomotive, raised by a hydraulic elevator to the firing platform and dumped.

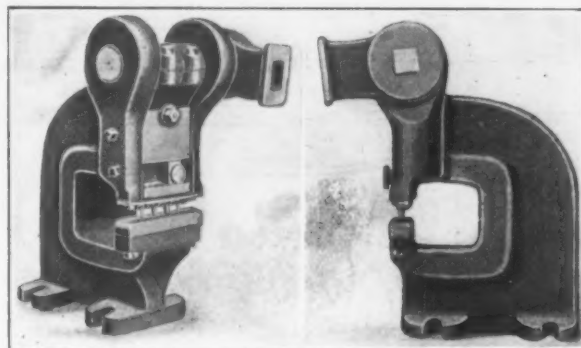
Ashes from the locomotive are discharged at the pit level, placed in a wagon, raised on the hydraulic elevator to the level of the main floor, and run into a chute leading into a conveyor, delivering into the ashbin over the outside track. From there the ashes are discharged into a car run in on the track below.

Water used in the locomotive boiler is taken from a supply tank located in the corner of the laboratory. The water first passes through a meter, the reading of which is used as a check upon the weighing tanks. A small motor driven centrifugal pump returns to this supply tank the overflow from the injectors used on the locomotive.

The stack into which the locomotive discharges its smoke is a great improvement over the one originally used in St. Louis. It embodies the principle used many years ago for wood burning locomotives, but on a very much larger scale, so that the exit of gases shall be free enough not to cause smoke to go back into the building between the top of the locomotive stack and the bottom of the plant's stack. Within the enlarged head is a deflector for carrying the sparks to the outer portions of the casing, where they fall out of the flow of gases and drop into a hopper, from which they are eventually removed and weighed. The entire stack is supported upon a truck which is adjustable over a distance of 16½ ft. lengthwise of the building, to bring the stack directly over the locomotive's stack wherever the latter may happen to be located when the locomotive is ready for test. The opening in the roof is provided with a hood, by which it is always closed to the weather, regardless of the position of the stack.

### The Marvel No. 10 Hand Punch.

A first glance at the illustration might give the impression that the tool represented is a multiple punch. While it contains four punches, the Marvel punch, No. 10,



The Marvel No. 10 Hand Punch Made by the Armstrong-Blum Mfg. Company, Chicago.

built by the Armstrong-Blum Mfg. Company, 104 North Francisco avenue, Chicago, is not a multiple punch in the sense of punching four holes simultaneously, its purpose being to punch any one of four different sizes of holes at any time. For example, a ¼, 3-16, ¼ or 5-16 in. hole may be punched instantly without any changing of dies, for all of the punches may be left in place at all times if desired. The punches are simply dropped in position, and the steel block with the thumb screw, shown in the illustration, can be shifted over any punch desired, and that punch made active by turning the thumb screw.

The slide is case hardened steel, and the movable block is hardened tool steel. The die is made of one piece, ¾ in. wide, the top face of the die being 1½ in. from the bottom of the throat and 1¾ in. from the top of the throat. The throat gap is 4 in. The die is also extended forward, so as to allow for punching the webs and flanges of channels, I beams, angles, &c. The operating lever may be swung in either way to depress the slide. The maximum capacity is a 5-16-in. hole in ¼-in. stock. The machine complete with four punches, die and lever weighs about 90 lb.



## The Works of the Atikokan Iron Company, Limited.

### New Blast Furnace, Ore Roasting Kilns and Coking Plant at Port Arthur, Ontario.

Considerable attention has been given during recent years to the extensive deposits of magnetic iron ore which exist in the Province of Ontario, Canada, north and west of Port Arthur. Various projects have been advanced for the development of these deposits, but the first to enter the field as an operating company is the Atikokan Iron Company, Limited, of Port Arthur. The ore properties owned by this company are known to contain at least 5,000,000 tons, and the deposits are well situated for mining and transportation. The ore body consists of several veins, varying in sulphur and phosphorus content. Some of the veins carry ore which can be used in the blast furnace without roasting, while that from other veins is found associated with pyrrhotite to such an extent that it will require roasting before it can

3 is given a section of the furnace, power plant, roaster and coke ovens.

#### The Ore Roaster.

The advantages of roasting magnetic ores, whether they contain sulphur or not, having been determined at the Wharton Furnaces at Wharton, N. J., it was deemed advisable by the Atikokan Iron Company to provide roasting kilns of a capacity sufficient to treat all the ore supply required by the furnace. The type of roaster adopted is that in use by the Wharton Furnaces, the Lebanon Furnaces in Pennsylvania, and by Bolckow, Vaughan & Co., Limited, Middlesbrough, and the Frodingham Iron & Steel Company, Frodingham, England. The fuel used in this type of roaster is the waste gas of the furnace. This made necessary the adoption of eco-

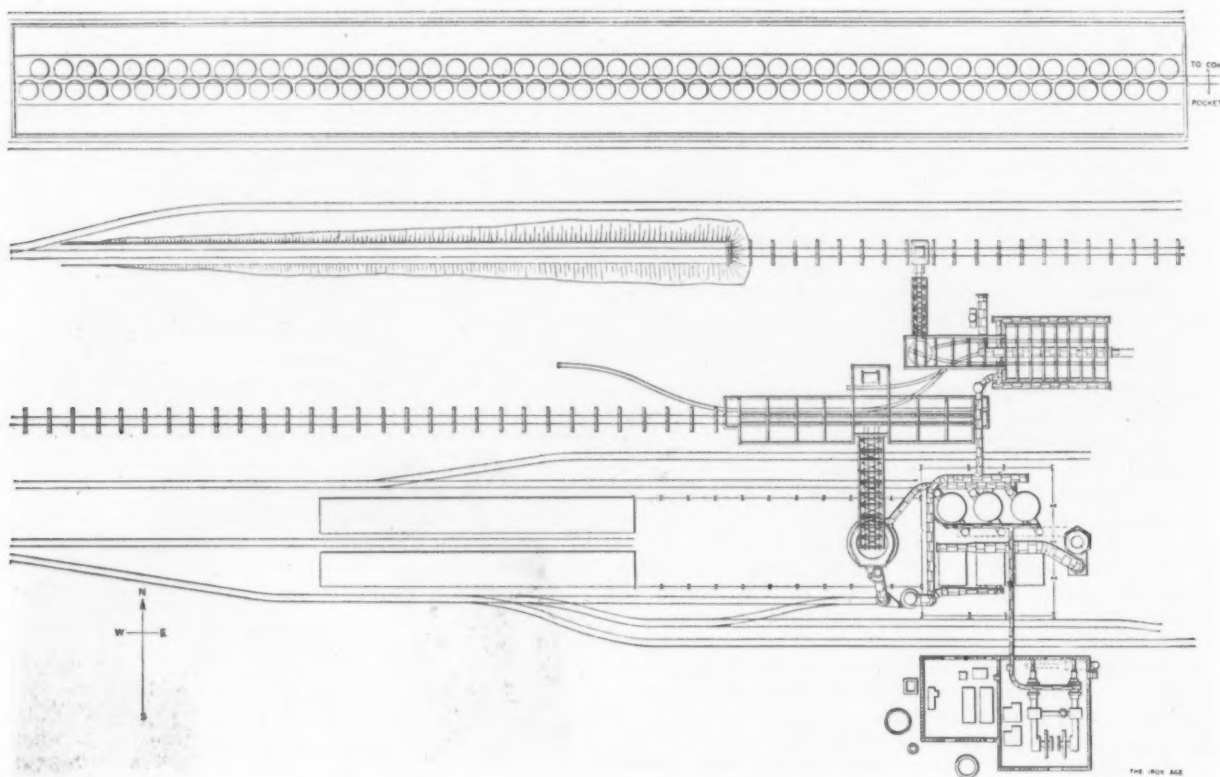


Fig. 1.—Plan of the Blast Furnace, Coke Oven and Ore Roasting Plant of the Atikokan Iron Company, Port Arthur, Ontario.

be utilized. The ore is found in a steep, narrow hill, through which a tunnel has been driven, disclosing ore in three separate places, having widths of 44 ft., 10 ft. and 16 ft., respectively. The ore is brought from the tunnel, which has 80 ft. of ore above it, in 2-ton cars and dumped direct into a crusher. It is then hoisted by belt and bucket conveyor and dumped on screens which lead to ore bins built directly over the railroad track. A spur 4 miles long was built from the Canadian Northern road to the mine. It departs from the main line near Kawene, which is about 140 miles from Port Arthur.

For the Atikokan Iron Company's Port Arthur operations, which involved the building of coal docks, a blast furnace, coke ovens and ore roasting kilns, the site selected is on the water front west of the Great Northern elevators. The frontage is 1800 ft. and the track extends 3000 ft. back from the water. A coal dock and pockets were constructed on one side of the property, while the blast furnace, coke ovens, ore roasters, &c., were grouped as shown in the accompanying illustrations. The furnace and connected plant are now approaching completion, and will be put in operation early in the summer. The general arrangement is shown in Figs. 1 and 2. In Fig.

nomical engines, pumps, &c., in order to save gas at the power plant. The gases are consumed in a combustion chamber; the products of combustion passing through the ore to the chimney chamber, whence they are drawn by an exhaust fan delivering into a chimney. The use of the exhaust fan for creating the draft permits of varying the supply of air according as the ore to be roasted is coarse or fine, the latter requiring a greater draft than the former. In the design adopted at Port Arthur the ore is elevated to the top of the roaster by means of a skip hoist, discharged into an automatic railroad truck of the Mead-Morrison type, and thence delivered in bins on top of the roaster. The ore "self feeds" from the bins into the roasting chambers as the roasted ore is drawn out of the roaster at the bottom. Bins are also provided at the bottom of each roasting chamber, the ore being delivered therefrom into electrically operated stock transfer cars, which in turn deliver the roasted ore to the furnace skip hoist. The bottom of the roaster is also designed so as to permit the delivery of roasted ore into ordinary railroad cars for shipment. The roaster and equipment are arranged to permit additional roasting chambers being erected later, the hoisting equipment be-

ing of ample capacity to meet possible requirements. The arrangement of chambers and other parts of the roaster is shown in the sectional elevation in Fig. 4.

#### Coke Oven Plant.

In view of the difficulties and expense attendant upon the transportation of coke it was decided to build a plant of coke ovens, and owing to local conditions the beehive oven was found to be the most desirable type. The coking plant consists of 100 ovens, 12 ft. 3 in. in diameter, the working platform being located 5 ft. 10 in. above the yard level. Coal is delivered to the works by vessel, coal pockets being provided from which the coal is dropped into electrically operated larries. The latter

diameter hearth. The construction permits, however, a bosh of 17 ft. in diameter and a hearth of 11 ft. in diameter.

The hot blast equipment consists of three Roberts-Cowper stoves, 18 ft. in diameter by 70 ft. in high. The boiler plant embraces four water tube boilers of 200 hp. each, manufactured by the Canada Foundry Company, Limited. The blowing engine is a disconnected cross compound condensing horizontal engine manufactured by the Southwark Foundry & Machine Company, Philadelphia. The design of the engine is such that either the high or the low pressure side may be operated as an independent engine. The air supply is taken from the

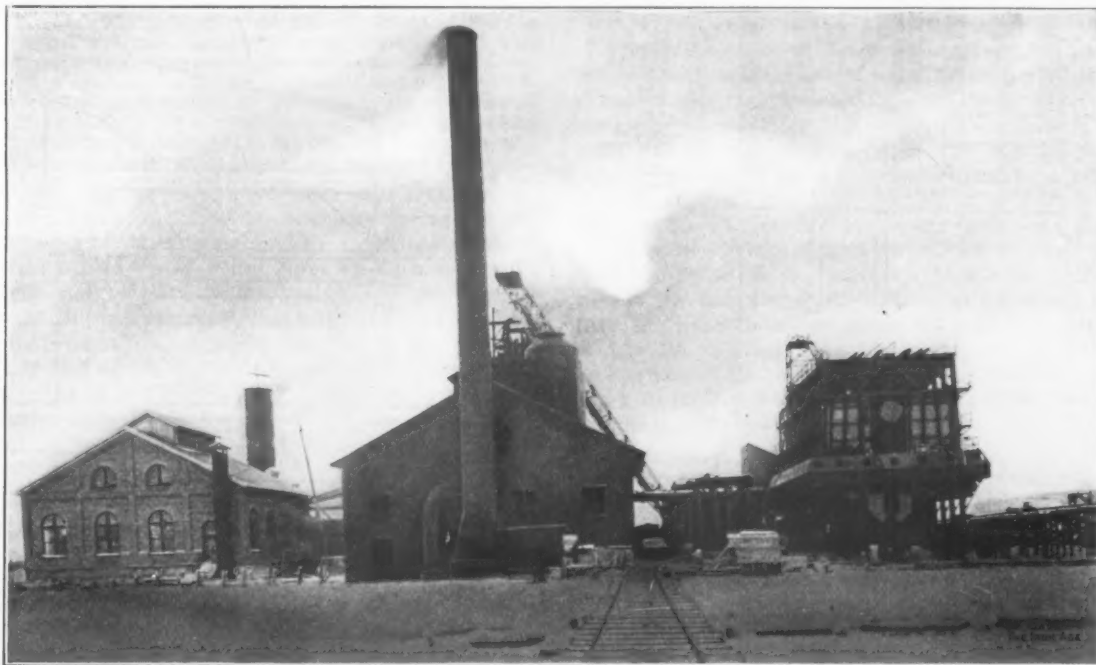


Fig. 2.—View of Ore Roaster, Blast Furnace, Cast House and Power House.

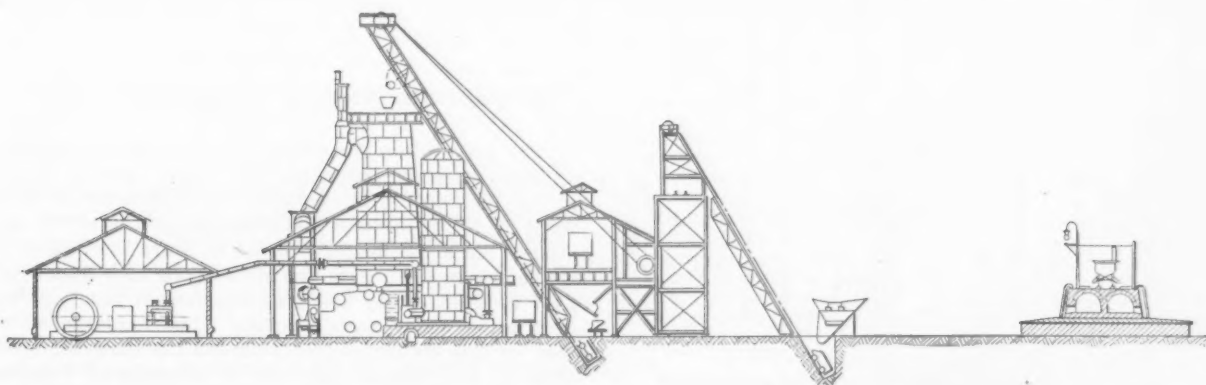


Fig. 3.—Sectional Elevation of Power House, Cast House, Skip Hoists and Beehive Coke Ovens.

travel over the coke ovens as indicated in Fig. 4. The coke will be loaded on special railroad cars and transferred over and discharged into the coke bins in the furnace stock house.

#### The Blast Furnace and Equipment.

The furnace proper and its equipment are designed so that for a comparatively small additional cost the plant will be capable of producing 200 tons per 24 hr. At present the furnace is lined down to a capacity of 100 tons a day, the purpose being to increase to 200 tons a day for its second blast. There is the usual modern construction of a steel shell carried on cast iron columns, the bosh being furnished with bronze cooling plates of the Scott design. The furnace charging apparatus consists of a double skip hoist and a sealed top of the Roberts revolving type. The furnace is 75 ft. in high and is at present lined to a 14-ft. diameter bosh and 8 ft. 6 in.

outside of the engine house. The condenser is arranged to operate with the waste water discharged from the furnace and stoves or with lake water. The water circulating and boiler feed pumps are both in duplicate.

#### Bin System and Transfer Car.

The stock bin equipment consists of one large coke bin discharging directly into the furnace skip cars and five bins to discharge into an electrically operated transfer weigh car, which delivers the material to the skip hoist. This is the transfer car which also transports the roasted ore from the roaster to the skip hoist. Its construction is shown in Figs. 5 and 6. Since ore bins are provided at the bottom of the roaster, it is not necessary to provide a large number of ore bins in the stock house. For this reason it is the intention to utilize but two of the stock house bins for ore, this being sufficient to provide against possible interruptions in the operation of the roaster. As

distributed, the storage capacity of the bins in the stock house will be as follows: Coke, 250 tons; ore, 500 tons;

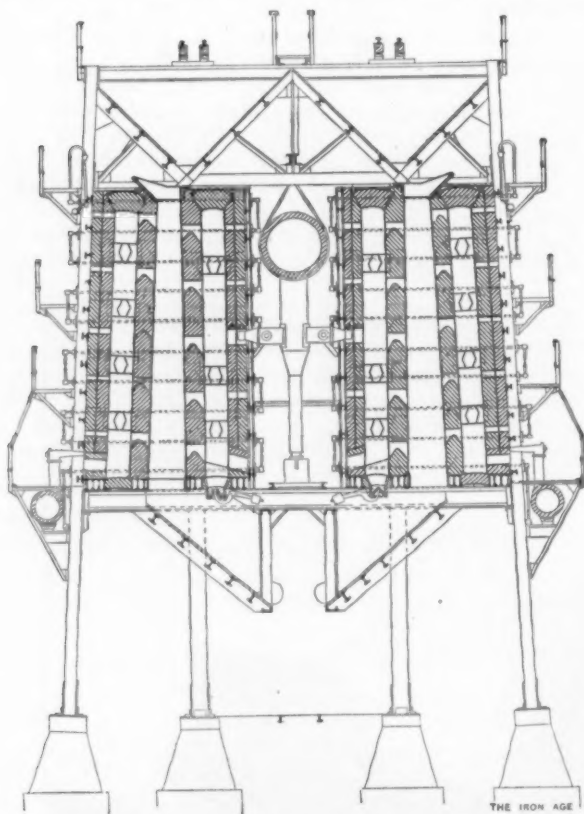


Fig. 4.—Sectional Elevation of the Ore Roasting Kilns, Showing Arrangement of Chambers.

limestone, 175 tons. The bin gates are of the pivoted type, operated by levers carried on the transfer car, thus

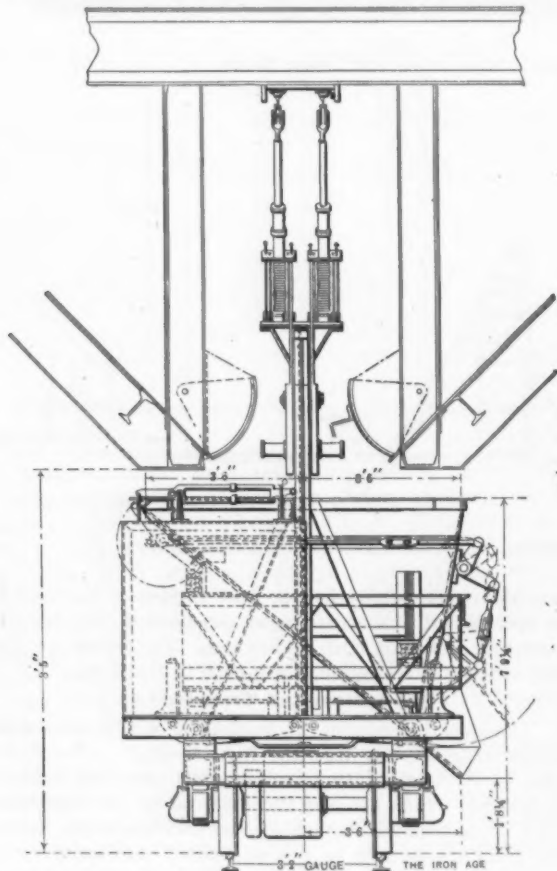


Fig. 5.—End View of Stock Transfer Weigh Car.

avoiding the expense and complication of separate levers at each gate. Both the furnace and roaster skip hoists are operated by steam engines.

It has been the intention to build a plant capable of being operated in the most economical manner. Fuel and labor economy are naturally important elements in a manufacturing plant so far removed from the centers of population, and it is believed that these requirements have been met within the natural limits of the problem. The plant has been built under the designs and inspection of Frank C. Roberts & Co., Philadelphia, Pa., the construction being carried on under the supervision of Robert R. Jones, superintendent.

The officers and directors of the Atikokan Iron Company are as follows: President, D. D. Mann; vice-president and manager, J. C. Hunter; secretary, R. M. Hunter; treasurer, Hugh Sutherland. Directors: William Mackenzie, president Canadian Northern Railway, Toronto; D. D. Mann and L. A. Lash, vice-president and

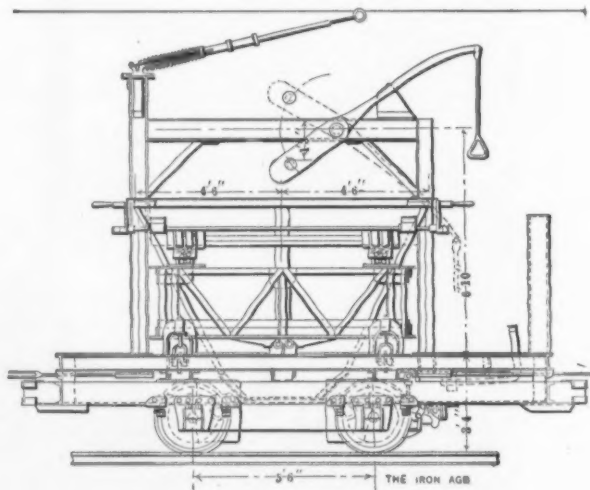


Fig. 6.—Side View of Transfer Car, Showing Lever for Opening Bin Chutes.

counsel, respectively, of the same company, Toronto; Hugh Sutherland, Canadian Northern Railway, Winnipeg; A. Stamford White, A. S. White & Co., Chicago; J. W. deC. O'Grady, general manager Northern Bank, Winnipeg; R. M. Hunter, J. C. & R. M. Hunter, Duluth, Minn.; J. C. Hunter, Port Arthur.

#### St. Paul Minneapolis Foundrymen Confer.

The Twin Cities Foundrymen's Association, composed of foundrymen of St. Paul and Minneapolis, gave a dinner at the West Hotel, Minneapolis, on Wednesday evening, April 24, to the business and professional men of the two cities. Since the molders' strike of May, 1906, most of the foundries in St. Paul and Minneapolis have been operated as open shops, and very substantial progress has been made under these auspices. The foundrymen, in view of this distinct advance toward the economic operation of their plants, felt that a gathering of business men would be of value for the purpose of presenting publicly a statement of the better conditions now prevailing.

About 300 representatives of the manufacturing and commercial interests of the two cities were present. Congressman Littlefield of Maine made an address on "Labor Legislation in Congress," reviewing the efforts made for and against certain labor measures that have been urged upon Congress in the past two years. J. A. Emery, New York, secretary of the Citizens' Industrial Association, who, with Congressman Littlefield, was on the after-dinner programme at the last convention of the National Foundrymen's Association in New York in November, 1906, made a telling speech on certain developments in the labor union problem in the past few years. Archbishop Ireland of St. Paul, the last speaker of the evening, dwelt on the relation of religion to the labor problems of to-day. George M. Gillette of the Minneapolis Steel & Machinery Company, acted as toastmaster. President O. P. Briggs and others prominent in the work of the National Foundrymen's Association were present.



### Mexico Will Welcome the Civil Engineers.

DURANGO, April 24, 1907.—The approaching thirtieth annual convention of the American Society of Civil Engineers, which is to be held in the city of Mexico in July next, is already a subject of much local interest. The press of the capital has devoted a good deal of space to the history, aims and *personnel* of the association and to the projected programme for the entertainment of the visitors during the convention. Among other things it was said in one of these notices:

The first session will be held on the evening of Monday, July 8, and after the address of welcome by Secretary Fernandez, George H. Benzenberg, the president of the society, will deliver his annual address. Following the opening session a social function will be held in the Minería the same evening, during which the American and Mexican engineers will have an opportunity to become acquainted with each other. Mr. Fernandez will represent both the Mexican Government and the Society of Mexican Engineers, of which he is the president, at the opening session, and all engineers of the Mexican society, as well as all foreign engineers in the city, are to be accorded a cordial welcome to all the sessions of the American society.

It was further announced that the arrangements made for the recreation of the members during the sessions and afterward include visits to points of interest, such as the water works plant at Xochimilco, the drainage works of the valley, the various public buildings, the electric light plants of Necaxa and Orizaba, and that an excursion along the line of the Mexican Railway and a visit to the Isthmus of Tehuantepec may be included in the programme. According to the same authority there are in the Republic a total of 53 members of the society, 17 of them being residents of the city of Mexico.

### Railroad Concessions and Construction.

The engineering corps of the International, for nearly two years in the field, locating a line between Durango and Guadalajara, is now in camp at Jalos, in the State of Jalisco. The location has reached 655 km.

The construction of the Mexican Central's long contemplated short line from the city of Mexico to Tampico is about to be commenced, the contract for the first 50 km. out of Tampico having been let.

A concession has been obtained by Señor Inigo Noriega for the construction of a line of railroad from the capital to the town of Chalco, in the State of Mexico. The road is to be of narrow gauge, and will be 33 km. in length. Surveys must begin at once. Two years are allowed for the construction of the line. The concessionaire owns a large body of reclaimed land around Lake Chalco.

A concession for a line 51 km. in length, also narrow gauge, has been granted to Senator José Castellot. It is to run from Del Rio, a station on the Toluca & Morelia division of the National Railway to various haciendas, then toward Zitacuaro, and to the limits of the State of Mexico. Five years are allowed for the completion of the work.

Fifteen km. have been completed of the branch line of the Mexican Central between Ocotlan and Atotonilco.

Good progress is being made upon the construction of the Pan-American Railway, which is pushing on toward the border of Guatemala, 358 km. having been reached.

### Industrial Notes.

According to a dispatch from Guadalajara, the Aguascalientes "tin mine" boom was short lived. The dispatch says: "The tin mining boom in the Paso de Sotos District of Jalisco, adjoining the State of Aguascalientes, has entirely subsided, according to S. S. Gates of Guadalajara, who has just returned here after a stay of several months in the district. Mr. Gates has been in charge of development work there for George and Robert Mitchell, well-known mining operators of the United States, and their associates. Before leaving the district Mr. Gates disposed of all equipment used in development operations. The tin veins, he says, failed to prove of sufficient value to warrant the continuance of the work."

During the first six months of the current fiscal year

the total value of imported merchandise was \$108,598,506.04, and of exports \$117,883,937.18. For the corresponding period in the preceding year the totals were, respectively, \$87,495,560.85 and \$131,864,507.96. Of the imports in the current year, as above given, the United States furnished goods to the value of \$67,275,176.63; Germany, \$12,573,055.12; Great Britain, \$10,303,207.60, and France, \$8,891,869.10. The value of mineral products exported, aside from gold and silver, was \$17,643,393.06, comprising the following:

Antimony .....	\$687,778.00
Copper .....	13,335,173.00
Marble .....	21,080.00
Plombagina .....	45,820.00
Lead .....	1,875,124.56
Zinc .....	623,221.12
Other mineral products.....	1,055,796.38

The National Metal Company has purchased a large tract of land, and will build an additional refining plant of large capacity, orders for the requisite equipment having already been placed.

W. H. Sinclair, secretary of the Mexico Mine & Smelter Supply Company, has resigned to accept the position of second vice-president and manager of the Mexican Steel Products & Machinery Company.

Water power concessions have been granted as follows: To Señor Indalecto Trevino, to use for the generation of electric power, 1200 liters of water per second from the river Escondido in the State of Coahuila; José R. Charles, to erect hydraulic works and to utilize for motive power 8000 liters per second from the Durango River in the Nombre de Dios and Mezquitil districts in the State of Durango.

J. J. D.

The output of bituminous coal in Pennsylvania in the year 1906 increased approximately 17,000,000 net tons over the production in 1905. This enormous increase was made despite the stoppage of work in the early part of the year, owing to wage scale settlements. The reports of the mine operators show that the total production of bituminous coal for the year was 136,312,363 net tons, as against 119,330,878 tons in 1905. The figures of the leading producers are as follows:

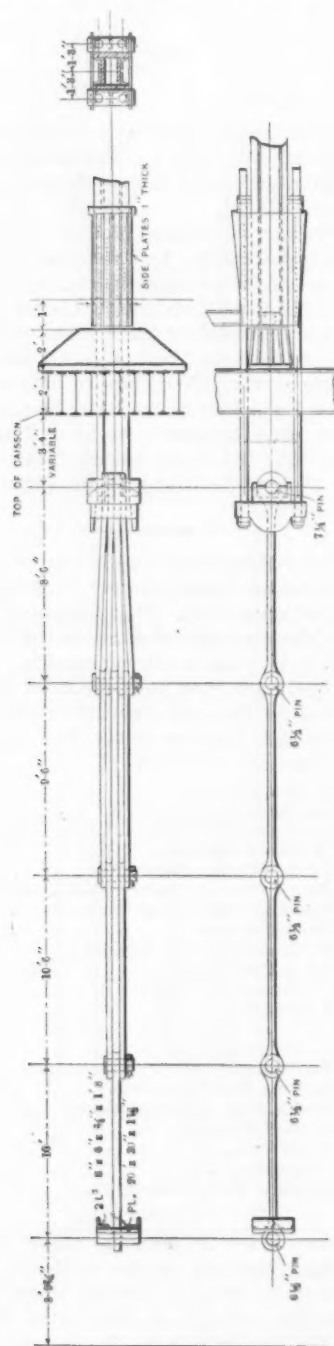
Pittsburgh Coal Company.....	15,147,456
H. C. Frick Coke Company.....	8,569,098
Monongahela River Consolidated Coal & Coke Company	6,386,892
Keystone Coal & Coke Company.....	3,731,590
Berwind-White Coal Mining Company.....	3,329,117
Pennsylvania, Beech Creek & Eastern Coal Company.	2,867,899
Rochester & Pittsburgh Coal & Iron Company.....	2,584,074
Westmoreland Coal Company.....	2,329,627
Pittsburgh & Westmoreland Coal Company.....	1,600,081
Washington Coal & Coke Company.....	1,579,385
Somerset Coal Company.....	1,579,385
Ellsworth Coal Company.....	1,416,370
W. J. Rainey.....	1,356,188
Penn Gas Coal Company.....	1,296,417
Pittsburgh-Buffalo Company.....	1,218,162
Clearfield Bituminous Coal Corporation.....	1,210,785
Latrobe-Connellsville Coal & Coke Company.....	1,122,263
Oliver & Snyder Steel Company.....	1,159,051
Cambria Steel Company.....	1,112,793
Bessemer Coke Company.....	998,214
Hostetter-Connellsville Coke Company.....	596,476

In connection with the announcement just made by Secretary Edgar Marburg of the tenth annual meeting of the American Society for Testing Materials at Hotel Chalfonte, Atlantic City, N. J., June 20 to 22, 1907, it is stated that the membership of the society is now 880. With the co-operation of the members it is hoped to increase this to 1000 by the time of the Atlantic City meeting. The volume of proceedings of the last annual meeting contains 712 pages, with 290 illustrations.

The court of Lancaster County, Pa., has made an order for the sale of the properties of the Susquehanna Iron & Steel Company, located in York and Lancaster counties, Pa., by the receivers, P. Eckert Slaymaker and C. C. Kauffman. The sale will be conducted at the Columbia mill on May 31. The properties are subject to a mortgage of \$300,000, and no sum less than \$400,000 will be accepted. The plants include Aurora Furnace, at Wrightsville; Vesta Furnace, at Watts Station, the pipe and rolling mills at Columbia and one mill in York.

### Anchorage of the Singer Building Tower.

The manner of anchoring the 45-story Singer Building to its foundation is a new departure in architectural practices. The present building laws of New York City require that the stability of a structure be figured upon the assumption of a wind pressure of 30 lb. per square foot. A wind such as this, if it actually occurred, would amount practically to a hurricane and would be sufficient to overturn an ordinary Pullman sleeper, but winds in



Details of a Typical Column Anchorage for the Singer Building Tower.

this locality have never been known to attain such a pressure.

The Singer tower is to be 65 ft. square and 612 ft. high above the curb. Allowing for this excessive and improbable wind pressure of 30 lb. per square foot, a force of 330 tons (theoretically) would be exerted by the wind on any single face. The tower weighs 18,365 tons, and this is amply sufficient to resist the overturning moment of the wind. However, the limitations imposed by the architectural treatment of the building resulted in a wind bracing system of such design that 10 of the 36 columns supporting the tower showed an "up-lift"—

that is, the "dead weight" carried by them is less than the upward pull exerted on them by the wind bracing systems; thus, in one case, the "dead load" on the columns is 279 tons and the "up-lift" 480 tons, therefore this column and the other nine like it had to be anchored down to the caisson to resist an "up-lift" of 200 tons.

This was done by embedding several lengths of great eye-bars in the mass of concrete forming the caissons reaching down to bed rock. These eye-bars are embedded to a depth of 50 ft. below the level of the basement floor. These bars in general are about 10 ft. long and vary in cross section, the largest being 6 x 3 3/8 in. and the smallest 6 x 1 in. They are held together by pins 6 1/2 in. in diameter, and their top lengths are fitted under each column with a cast steel saddle to which are fastened the lower ends of the sets of four bolts projecting upward out of the concrete. These bolts are 3 3/8 in. in diameter for the six columns subject to the greatest lift—480 tons—and 2 3/4 in. in diameter for the four columns subject to only 270 tons uplift. The longest are about 16 1/2 ft. long. The details of construction for the anchoring of one of the columns are shown in the illustration. It will be noted that the steel grillage was perforated to allow the anchorage bolts to pass upward to be attached to the columns proper. This, it is stated, has never been done before. The special bolts, saddles, eye-bars, pins, &c., were designed by Ernest Flagg, the architect of the building, constructed by the Milliken Brothers and installed by the Foundation Company, being buried in their concrete piers during the regular process of constructing the foundations.

### Tests with Superheated Steam.

To test the advantage of steam superheating, the Britannia of the British Navy was fitted with superheaters in six of its 18 boilers, the superheating surface being used in place of water heating surface, so that the total heating surface in each of the six superheating boilers was the same as that in each of the other 12. The full power is 18,000 hp., but in ordinary cruising only 4000 hp. is used. Six boilers are thus sufficient to furnish steam for cruising purposes. At this relatively low speed it is evident that the engines are necessarily working at a comparatively low economy. Under these conditions it was found that the coal consumption with saturated steam was 2.07 lb. per horsepower hour, as compared with only 1.77 with the superheaters in service. The steam consumption with saturated steam was 21.02 lb., as compared with 18.9 lb. with superheated steam. The superheat at the boilers was about 92 degrees F., and at the engines 83 degrees. These results were obtained as a mean of 30-hr. trials under each set of conditions.

Similar trials were run with the engines developing 70 per cent. of full power, comparisons being made between the results obtained in the Britannia, using superheated steam from six boilers and saturated steam from the others, the superheated steam being used in the port engine, and saturated steam in the starboard; and the saturated steam results from the average of six other ships of the same design, size and date. The superheat at the boilers was 72 degrees, dropping to 33 degrees at the engines. The coal consumption was 1.5 lb. per unit as compared with 1.78 lb. for saturated steam. At full load the superheat at the six boilers was 88 degrees, at the engines 31 degrees. The coal consumption was 1.83 lb., as compared with 1.92 lb. for the average of the six ships using saturated steam. These results, which seem to indicate a saving of some 15 per cent. in coal consumption, point to an important economy in a branch of steam engineering where a small coal consumption is of the utmost importance. Similar trials have been made in the United States Navy, where the battleship Indiana was recently reboilered. Advantage was taken of the opportunity to fit superheaters to four of the eight new Babcock & Wilcox boilers, and the result is said to have been a marked gain in economy over the older method of operation.

### A Reed Heavy Duty Back Geared Drill.

The desirable feature for general shop work of the drilling machine shown in the illustrations and built by the Francis Reed Company, Worcester, Mass., is that while it has the rigidity and power for high duty work, it may readily be transformed into a sensitive drill for the lightest service. This versatility is obtained by providing back gears for each spindle, which when in action convert what is normally a sensitive drill into a powerful power feed machine capable of drilling up to a 1½-in. hole. The machine illustrated has two spindles, but it is also built with any desired number of spindles. Fig. 1 is a general view of the machine from the front, and Fig. 2 a side view of the head, showing the driving mechanism for the drilling and feeding.

The drive from the tight and loose pulley shaft is transmitted through bevel gears to vertical shafts, one for each of the spindles. The bevel gear at the lower end of each vertical shaft is rawhide, and the three-step cone pulley at the top of the shaft is belted across to a similar cone pulley on the corresponding spindle, 1½-in. belts being used. The three spindle speeds so obtained, based on a constant speed of 450 revolutions of the driving shaft, are 710, 450 and 240 rev. per min. The back gearing gives three slower speeds, 110, 70 and 35 revolutions, respectively. Each spindle is back geared independ-

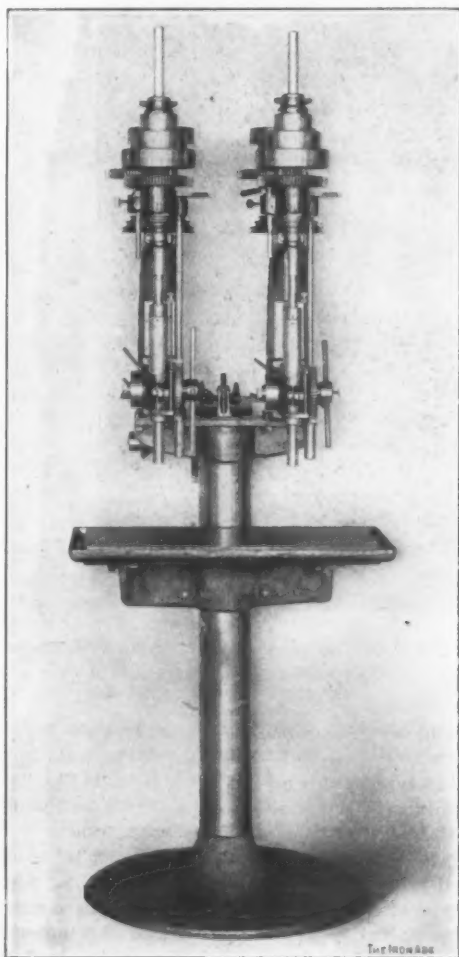


Fig. 1.—The Combined Sensitive and Back Geared Drill Built by the Francis Reed Company, Worcester, Mass.

ently of the other. At the top of the spindle and keyed to it is one member of a clutch, the other member of which is in the upper face of the cone pulley, and when the clutch drive is engaged the drive is direct, without the intermediary of the back gears. The same lever that throws in the back gears throws out the clutch, disengaging the spindle from the pulley and preventing the simultaneous engagement of the clutch and the back gears. A locking device is provided to maintain the lever in either position.

Each spindle drives its own feed, with three changes, from a cone of grooved pulleys. The driven feed shaft

is geared to another shaft, the lower end of which carries a worm meshing a worm gear, that through the usual rack, pinion and quill effects the vertical movement of the spindle. The drive by belt instead of by positive gearing throughout introduces the feature of flexibility, as the belt will slip before the drill is crowded to a breaking point. The feed is automatic, with a positive stop and automatic return of the spindle. When the feed

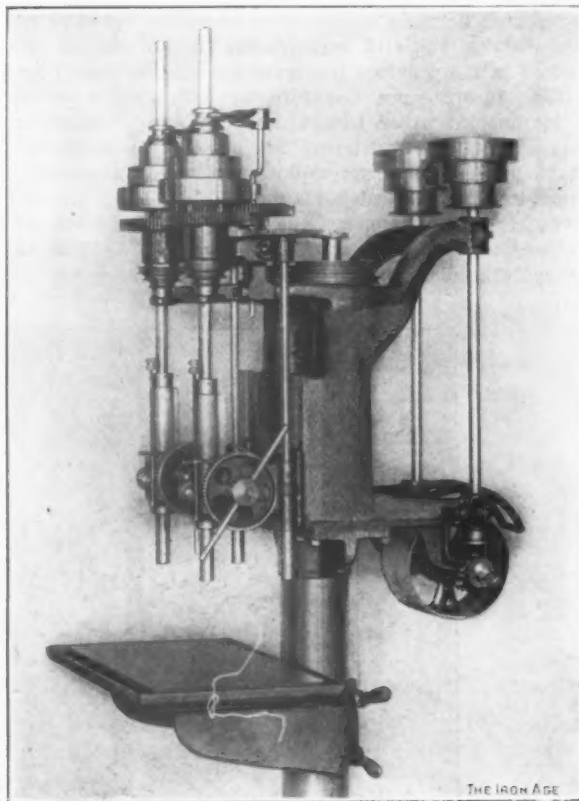


Fig. 2.—A Side View of the Reed Two-Spindle Back Geared Drill.

is tripped a spring inclosed in a spring case returns the spindle to its normal or upper position. The feeds per revolution of the spindle are, respectively, 0.014, 0.011 and 0.009 in. With the highest speed and feed the machine will drill at the rate of 10 ft. per minute.

The heads are adjustable up and down on the slides and are clamped at any point in their travel. The table is adjustable vertically on the column and swings either way. It is counterbalanced by a weight suspended inside of the column. The spindles are 15-16 in. in diameter and have a run of 6 in. The machine will drill to the center of a 16-in. circle. The table is 12 x 26 in., and the post 5 in. in diameter. The weight of the machine is 695 lb.

Crude oil fuel is being used in the boiler plant of the Eagle Flour Mills at Newton, Mass., at a cost which is said to compare very favorably with that of coal. About 170 bbl. are consumed per week at a cost per barrel of flour produced of about 4 to 4.7 cents. The fuel cost when coal was burned averaged about 4.6 cents per barrel of flour output, besides the labor cost of handling the coal and of stoking, which would appear to make the oil the more economical. The burner employed uses steam for atomizing the liquid fuel, and no change was made in the furnace except to cover the grates tightly at the rear with bricks and sand, and at the front with half bricks laid loose, with 1-in. air spaces. At the front, close to the furnace doors, an air opening measuring 8 x 12 in. was left on each side. Combustion is said to be absolutely smokeless when the burner is properly regulated.

The officers of the American Steel & Wire Company are now making the regular spring inspection of the plants of the company, beginning on Monday, April 29, with the Chicago District.



### British Columbia's Iron Policy.

TORONTO, April 29, 1907.—In the British Columbia Legislature last week Premier McBride announced his purpose to introduce next year legislation for the encouragement of iron smelting in the province. He proposes that a high royalty be levied on all iron ore mined in British Columbia, and that a bounty almost as high be paid upon all ore smelted within the province. Thus, in the case of exported British Columbia iron ore there would be no mitigation of the stiff royalty, but in the case of ore smelted in the province the royalty would be largely remitted. In substance, therefore, the arrangement would be tantamount to an export duty, an impost which in form a provincial legislature has not the competence to establish. As it does not violate the letter of the constitution Premier McBride's plan would stand. A similar device for handicapping American manufacturers, as against Canadian manufacturers in the use of a Canadian raw material, has been maintained in operation for years

### Special Newton Slotters.

A considerable advance has been made in designing tools for certain classes of heavy work, where it has been found of material advantage to bring the tool to the work rather than the work to the tool. One of the tools in that line which embodies recent improvements is a special 60-in. stroke motor driven slotting machine, built by the Newton Machine Tool Works, Philadelphia, Pa.

Fig. 1 shows two of these tools at work slotting bases for electric generators. These tools have a maximum stroke of 60 in., and are operated by a spiral pinion and rack, the control being through straight and cross shifting belts. The heads are counterweighted, the weights running inside the upright frame of the tool. The motor driving the countershaft is located at the base of the tool inside the upright. The motor is of 10-hp. size and operates on direct current. The tool post on these machines has an in and out adjustment of 4 in., and has a cross feed of 48 in. The machine complete weighs 30,-

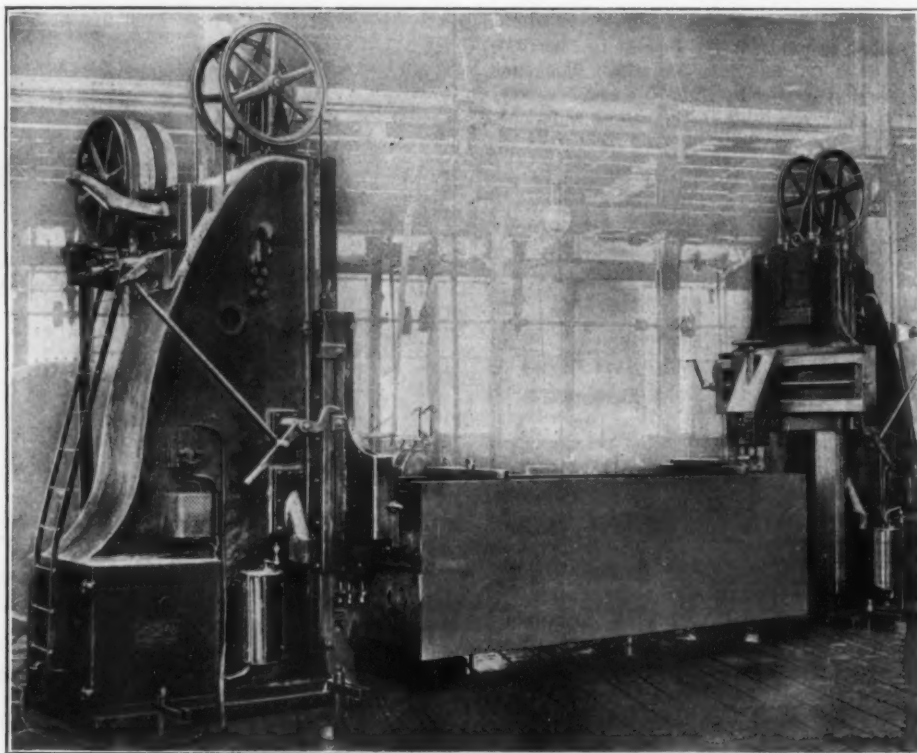


Fig. 1.—Two Portable 60-In. Slotters, with Spiral Rack and Pinion Drive, Built by the Newton Machine Tool Works, Philadelphia, Pa.

by the Government of Quebec. Pulpwood cut on the crown lands of Quebec is subject to a stumpage tax of 65 cents a cord. On such of the pulpwood as is converted into pulp in Canadian mills 25 cents a cord is refunded. There is no refund upon wood shipped out of the country, so that in effect Quebec imposes an export duty of 25 cents a cord on pulpwood.

In giving practically a year's notice of the Government's intention Mr. McBride said he was actuated by consideration for outsiders who had secured large iron ore deposits in British Columbia with the intention of taking the ore elsewhere for treatment. Evidently the outside parties he had in mind are American promoters, and in some cases American capitalists, who have lately been taking an active interest in iron ore properties on the Island of Vancouver. These option holders and purchasers let it be known that the ore was to be used in furnaces south of the international boundary line. Without indicating expressly whom he meant the Premier stated that he thought it but fair to give outsiders concerned timely warning that the ore would become subject to a differential tax if exported. He felt confident, he said, that the plan would result in the upbuilding of the iron industry, would open up the province's resources and expand local trade.

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000 lb., and occupies a floor space of 48 x 70 in., and is 15 ft. high.

Another type of this machine is shown in Fig. 2. This tool is built with a narrow upright frame, so that it can be placed inside of motor frames as small as 5 ft. in diameter for slotting the spiders in the rough, which are afterward milled by a portable vertical milling machine. In this type of machine the head is driven by a screw instead of a spiral rack and pinion and the motor is on top of the machine, driving for the reversal of stroke through a Riddell pneumatic clutch, the principle of which has already been described in these columns.\* This arrangement permits of more compactness than the style of drive shown in Fig. 1, and at the same time gives added power to the machine.

In the clutch-driven tool the shock of the reverse is taken from the motor by the flywheel mounted on the armature shaft. The motor pinion is a rawhide gear. All other gears are of cast iron, except the bevel gears and pinions and clutch gears, which are of steel. The screw is 0.6 carbon crucible steel, with a bronze nut, split to compensate for wear. All high speed shafts are of crucible steel, bronze bushed.

\* "An Extra Heavy Newton Slotter," *The Iron Age*, November 29, 1906.

The motor furnishing the drive of this tool is also of 10 hp. The rawhide gear on its shaft meshes with an intermediate gear, which in turn drives a gear on the short shaft just under the motor support. This shaft carries two other gears, one next to the driven gear and one at the opposite end. The first engages a gear on one member of the clutch, giving the direct motion, while the other through an intermediate gear gives the reverse rotation to a second member of the clutch. These two clutch parts run loose on the clutch shaft and continuously in opposite directions, being alternately engaged to the third and middle part of the clutch, which is keyed to its shaft. This shaft carries a gear which meshes the bevel gear at the top of the screw. This train of drive is best shown in the line drawing, Fig. 3. The air inlet to the pneumatic clutch is through the hollow shaft of the clutch, and is controlled by hand or automatically through the lever and rockshaft shown on the side of the frame in Fig. 2. Adjustable dogs on the side of the slide operate this rockshaft, throwing it in one direction or the other to reverse the movement of the slide by



Fig. 2.—A 60-In. Newton Slotter with Screw Driven Head.

admitting air to one or the other side of the clutch.

The speed of the slide is constant, 22 ft. per minute. The feed changes range from nothing to  $\frac{1}{8}$  in. per stroke, and the finishing cut is usually made with the feed controlled by hand.

On the side of the upright, Fig. 2, will be seen a long vertical rod. This is connected at the top to a lever operating a safety clutch, and is shifted by a dog permanently attached to the back of the slide, engaging a collar on the rod when the slide has traveled to the limit of its downward movement. A similar but shorter rod on the opposite rod of the clutch lever is shifted by contact with the upper end of the slide at its top limit of travel. In this way jamming of the slide at either extreme of its movement is prevented, as the clutch dis-

engages the bevel gear which drives the screw. The screw is driven in tension to prevent the possibility of its buckling, and thrust collars running in oil are provided at each end of the screw. The saddle proper is held to the slide by rectangular gibs, and lubrication is furnished through sight feed oil cups.

Both styles of slotter—that is, those shown in Figs.

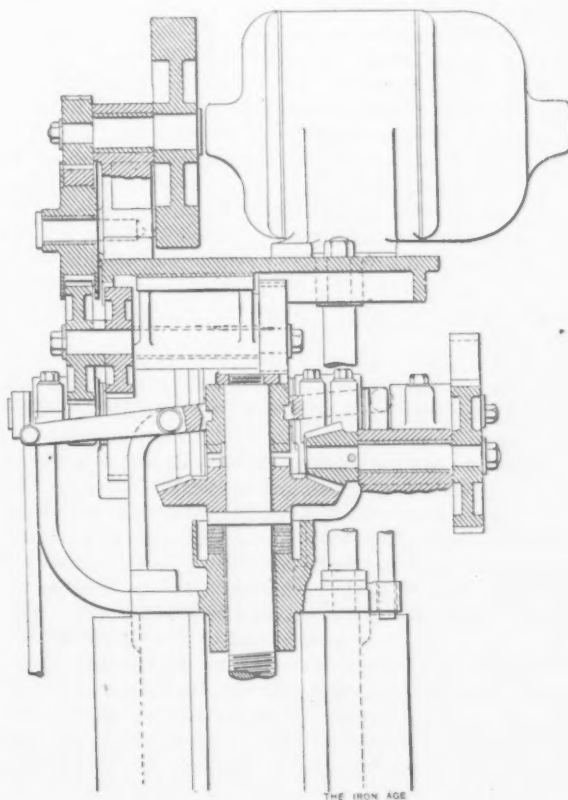


Fig. 3.—Details of the Drive of the Slotter Shown in Fig. 2.

1 and 2—are adapted to be handled from place to place by traveling cranes.

**Four More Blast Furnaces at Gary.**—The Riter-Conley Mfg. Company, Pittsburgh, has secured a contract for the erection of four more blast furnaces for the Indiana Steel Company, Gary, Ind. The new stacks will each be 23 x 90 ft., equipped with four 22 x 100 ft. hot blast stoves for each furnace. The same concern received a contract last year for the building of four blast furnaces at this plant, making eight in all. The first two are well under way and are expected to be ready for making iron in October. This contract for eight blast furnaces is probably the largest individual blast furnace contract ever placed with one interest in this country. The entire eight furnaces will front on the slip that is being constructed from the lake more than a mile inland, and will stand just far enough from the slip to allow for an ore yard between the water and the furnaces, thus admitting of economical handling of the ore from the boats to the furnaces. In addition to the ease of handling raw materials, some innovations will be installed, notably the gas washers for purifying the furnace gases, which will be of an improved type and will mark a forward step in this part of blast furnace construction.

The recently organized Cleveland Manufacturers' Club will hold an opening reception on May 15 at the clubhouse, which is being fitted up at 1420 East Fortieth street. Sixty names have already been enrolled on the list of members of the club.

The American Steel & Wire Company's Chicago offices, which were formerly located in the Rookery Building, have been removed to the twelfth and thirteenth floors of the new Commercial National Bank Building.

## The Tennessee Coal, Iron & Railroad Company's Report.

The forty-seventh annual report of the Tennessee Coal, Iron & Railroad Company, covering operations for the year ending December 31, 1906, has been made public by Chairman John A. Topping. The reports of this company have always been commendably full and clear, and the one just issued shows that the present management believes in maintaining the policy of giving stockholders complete information regarding the condition of their property. The report is so voluminous that only the chief points of interest can be reproduced here. In opening, the report calls attention to the fact that a radical change has been made in accounting, both in respect to providing more liberally than heretofore for provisional funds, the necessary replacements and depreciation to plant and machinery, depletion of mineral lands, and by direct charges to costs for repairs and maintenance. Under these headings the net income for 1906 absorbed the following increased charges as compared with the year 1905:

Fire and casualty fund.....	\$52,253.44
Maintenance and repairs.....	266,121.76
Depreciation to machinery and replacement accounts	145,587.28

Total.....\$463,962.48

Exclusive of this amount, income was charged with \$770,677.53 for depreciation and renewals. After making these liberal provisions for strengthening the properties, the gross income for 1906 shows an increase of \$269,020.50, and the net income \$59,053.45, in excess of the preceding year. The total income was the greatest in the history of the company, except for the year 1903, when present earnings were exceeded by \$156,796.88, differences in accounting methods not considered. After providing for all necessary funds, the payment of all fixed charges and setting aside 8 per cent. on the preferred and 4 per cent. on the common stock, the net amount carried to surplus for the year was \$126,881.02, as shown below:

### Income Account Year Ending December 31, 1906.

Earnings from operations after deducting charges for repairs and maintenance approximating \$1,500,000 .....	\$2,753,159.85
Less provisions made for the following purposes:	
Exhaustion of minerals.....	\$90,256.37
Rebuilding and relining furnaces and coke ovens.....	317,853.07
Replacements and improvements of machinery and plant at mines.....	170,422.32
Replacements and improvements of machinery and plant at furnaces and steel works.....	192,145.77
	770,677.53
Income from operations.....	\$1,982,482.32
Miscellaneous income, interest, &c.....	52,828.80
Total income.....	\$2,035,311.12
Fixed charges:	
Interest on loans and taxes.....	\$145,055.89
Interest on bonded debt.....	791,338.00
Dividends on guaranteed preferred stock of Alabama Steel & Shipbuilding Company .....	11,580.00
	947,973.89
Net income.....	\$1,087,337.23
Dividends:	
On preferred stock, at 8 per cent.....	\$9,964.00
On common stock, at 4 per cent.....	902,116.00
On common stock partly paid, at 4 per cent. ....	48,376.21
	960,456.21
Surplus for year.....	\$126,881.02

Following is a comparative statement of provisional funds:

	December 31, 1904.	December 31, 1905.	December 31, 1906.
Replacements and improvements .....	\$48,730.00	\$180,331.32	\$946,198.65
Relining and rebuilding furnaces and coke ovens .....	42,724.50	22,676.22	50,000.00
Accident or fire insurance and contingencies	213,331.62	159,158.98	155,828.73
Exhaustion of minerals .....			84,759.70
Totals.....	\$304,786.21	\$362,166.52	\$1,236,787.08

The financial statement shows the company to be in a sound financial condition, with current assets of \$3,004,480.09 in excess of current liabilities, as will be seen by the following balance sheet, as of December 31, 1906:

### Assets.

Cost of properties:	
Land, buildings, plant and machinery:	
At January 1, 1906, as adjusted.....	\$37,105,742.81
Additions during year.....	1,613,499.36
	\$38,719,242.17
Capital assets of Birmingham Southern Railroad Company and investments in and advances to Allied Companies:	
Birmingham Southern Railroad Company .....	\$1,122,973.90
Potter Ore Company.....	400,879.35
McCune Iron Company.....	32,693.31
Ensley Land Company.....	260,900.67
Tennessee Land Company.....	19,583.86
Booker City Land Company.....	32,840.55
	1,869,871.64
Assets in hands of trustees of sinking funds, exclusive of redeemed bonds.....	40,455.31
Current assets:	
Inventories of materials, supplies and finished product at cost.....	\$2,106,154.41
Accounts receivable.....	1,552,512.67
Bills receivable.....	\$1,906,658.38
Less discounted.....	1,321,083.32
	585,575.06
Miscellaneous investments.....	3,791.46
Working funds in hands of agents..	22,298.23
Cash in banks and on hand.....	690,557.10
	4,960,888.93
Deferred charges to operations:	
Prepaid insurance, &c.....	11,501.70
Total.....	\$45,601,959.75

### Liabilities.

Capital stock:	
Authorized .....	\$50,000,000.00
Issued:	
Common—	
Fully paid.....	22,553,060.00
75 per cent. paid .....	2,546,535.00
25 per cent paid .....	847,675.00
Advance installments .....	2,287.50
	\$25,949,557.50
Less in treasury.....	18,540.00
	\$25,931,017.50
Preferred—	
8 per cent. cumulative .....	\$248,300.00
Less in treasury.....	123,800.00
	\$124,500.00
Alabama Steel & Shipbuilding Company .....	\$440,000.00
Less in treasury.....	247,000.00
	193,000.00
	317,500.00
Total.....	\$26,248,517.50
Bonded debt:	
Tennessee Coal, Iron & Railroad Company .....	\$9,568,000.00
Subsidiary companies.....	4,351,000.00
Potter Ore Company—\$700,000 first mortgage 5 per cent. bonds, guaranteed jointly with the Republic Iron & Steel Company, less latter company's proportion .....	350,000.00
	\$14,269,000.00
Deferred purchase money notes:	
Birmingham Southern Railroad Company—secured by collateral.....	1,101,849.20
Current liabilities:	
Accounts and bills payable.....	\$1,289,622.40
Interest due and accrued.....	390,391.23
Dividends due and accrued.....	276,395.21
	1,956,408.84
Special funds:	
Replacements and improvements..	\$946,198.65
Relining and rebuilding furnaces..	50,000.00
Exhaustion of minerals.....	84,759.70
Accidents, fire insurance and contingencies .....	155,828.73
	1,236,787.08
Surplus .....	789,397.13
Total.....	\$45,601,959.75

At the close of the fiscal year ending December 31, 1906, materials in inventory, due to lack of proper transportation facilities and consequent inability to move to market products sold, indicate excessive stocks and adversely affected earnings and volume of business. All



materials listed were taken into the following inventory at actual cost, and in no case above current market value:

Finished product.....	\$73,241.86
Pig iron.....	224,747.70
Billets, blooms, slabs, &c.....	379,794.52
Ores .....	45,277.87
Scrap .....	238,856.48
Ferromanganese .....	56,777.35
Fuel .....	99,299.67
Fluxes .....	27,502.91
Refractories .....	65,642.82
Rolls, molds and stools.....	160,169.61
Stores .....	265,700.72
Foundry and machine shop stocks.....	71,966.95
Live stock.....	62,025.00
Miscellaneous .....	9,135.43
Commissary stocks.....	346,762.56
<b>Total.....</b>	<b>\$2,126,901.45</b>

The working capital, which on December 31, 1905, was \$1,816,340.66, was increased during the year to \$3,004,480.00.

In the preparation of the following comparative statement of income the accountants have taken the figures from previously published reports and classified the items entering into the results, so that all periods indicated are figured on the same accounting basis:

	1904.	1905.	1906.
Gross sales and earnings .....	\$9,607,578.74	\$10,951,979.02	\$13,265,970.66
Operating labor, material, &c.....	\$6,300,286.73	\$6,764,699.87	\$8,439,505.18
Repairs and maintenance .....	984,010.44	1,275,005.71	1,541,217.47
General expense, insurance, &c.....	460,650.36	428,044.18	532,088.16
<b>Totals.....</b>	<b>\$7,744,947.53</b>	<b>\$8,467,839.76</b>	<b>\$10,512,810.81</b>
Earnings from operations .....	\$1,862,631.21	\$2,484,139.26	\$2,753,159.85
Less depreciation, renewals and replacements .....	534,789.28	625,090.25	770,677.53
<b>Totals.....</b>	<b>\$1,327,841.93</b>	<b>\$1,859,049.01</b>	<b>\$1,982,482.32</b>
Add miscellaneous interest and fixed charges .....	831,583.24	830,765.23	895,145.09
<b>Net income.....</b>	<b>\$496,258.69</b>	<b>\$1,028,283.78</b>	<b>\$1,087,337.23</b>

Additions to property in 1906 were as follows:

Land .....	\$169,965.16
Ensley steel plant, No. 1.....	\$218,129.42
Ensley steel plant, No. 2.....	232,323.87
Ensley Furnace.....	19,000.00
General construction.....	116,019.97
Furnaces Nos. 1-4.....	127,700.58
No. 5 Furnace.....	216,924.55
No. 6 Furnace.....	6,526.65
Bessemer Furnace.....	8,656.26
Bessemer rolling mill.....	4,099.87
Pratt coal mine.....	164,849.38
Blocton coal mine.....	121,981.81
Blossburg coal mine.....	12,702.64
Blue Creek coal mine.....	57,912.25
Henry Ellen coal mine.....	3,704.81
Whitwell coal mine.....	3,961.30
Muscoda ore mine.....	11,035.94
Fossil ore mine.....	30,665.92
Potter ore mine.....	9,114.32
Greeley ore mine.....	12,411.23
Quarry (Ketona).....	5,297.56
<b>Total.....</b>	<b>1,383,918.13</b>
<b>Total.....</b>	<b>\$1,553,883.29</b>

#### The Steel and Pig Iron Output.

The physical condition of the mills has been improved by liberal expenditures, and, as shown by the income account, the cost of the work has been absorbed in operating charges. Future operations should benefit by this policy, both as to reduced costs and improved output. The production of rails, billets, steel bars and plates has been as follows in the past three years: 1904, 155,266 gross tons; 1905, 402,318 tons; 1906, 401,882 tons.

While a general rehabilitation of the old equipment has been taken care of by liberal maintenance, the Executive Committee has realized the necessity of increased steel and rail productive capacity, and has authorized the construction of a modern steel works and rail mill. These extensive improvements are expected to double the

steel output and rail capacity, and radically reduce the cost of production. The benefits expected from these additions to plant will not be operative until the last half of 1907.

The same policy as applied to the steel works and rolling mills, in respect to betterments and maintenance, has also been applied in building up the blast furnace department. Aside from the liberal expenditures appropriated for maintenance the work of reconstructing the entire Ensley group of furnaces along modern lines was authorized by the Executive Committee, and by July, 1907, three modern furnaces will be in operation, viz., Nos. 4, 5 and 6 Ensley. On completion of this work reconstruction methods will be applied to the remaining stacks of this group. The practical benefit of this work is now reflected both in lowered costs and by increased production. On completion of the work Ensley's pig iron capacity will be substantially doubled. The pig iron production has been as follows in the past three years: 1904, 475,314 gross tons; 1905, 529,036 tons; 1906, 641,887 tons.

#### The Iron Ore and Coal Production.

To meet the increased demands of the blast furnace department the Executive Committee has authorized liberal expenditures in opening up new slopes on Red Mountain, authorized the construction of a large number of tenement houses, and also an additional dolomite quarry at Ketona. These extensions are all under way and substantially increased production will be realized during the year 1907. In addition to these extensions heavy maintenance charges were absorbed at various operating points. The production of ore in the past three years has been as follows: 1904, 1,208,038 gross tons; 1905, 1,436,282 tons; 1906, 1,483,476 tons.

New mines known as the "Potter property," heretofore under joint lease to the Tennessee Coal, Iron & Railroad Company and the Republic Iron & Steel Company were during the year acquired by joint purchase with the Republic Company at a price and on terms exceedingly favorable to the Tennessee Company. Mineral experts estimate this property as adding 40,000,000 tons of high grade red ore to the company's extensive mineral holdings. Valuable acreage was also acquired at or near the Ketona dolomite property that will approximately double the dolomite or limestone reserves, and thus protect the blast furnace flux requirements for many years with a cheap and first-class stone.

Large appropriations have been authorized for the construction of seven modern coal washers, and within a few months the entire coal requirements for coking will be properly washed, and the coke produced will then be of a superior quality and the blast furnace economies extended. In addition to new washers, new mines are being opened and the facilities at old points strengthened, new houses for men constructed, and on the completion of this work a further increase than the gain for the year will be reflected. The coking capacity has not been extended, but has been increased by liberal repairs to old equipment, and further increases may be expected from this policy of rigid maintenance. The production of coal has been as follows: 1904, 2,756,300 net tons; 1905, 2,231,659 tons; 1906, 3,007,657 tons. The production of coke has been as follows: 1904, 871,532 net tons; 1905, 890,634 tons; 1906, 1,186,872 tons.

The knowledge that the Executive Committee has acquired as to the tonnage and character of the iron ore, coal and limestone owned in fee simple by the company satisfies the committee that in wealth of raw materials required for the manufacture of iron and steel the company ranks as second to only one in the world, and is far in advance of any other iron or steel producer in cost of assembling its raw materials for manufacture. The mineral reserves of coal and iron contained in the company's lands, as computed by competent authorities, are estimated to be 700,000,000 tons of iron ore and 2,000,000,000 tons of coal. Approximately one-half of this coal supply is of a superior coking quality, and the iron ore is largely of a self-fluxing character, analyzing approximately 38 per cent. metallic iron. This ore is well suited to the manufacture of high grade foundry pig

iron and to the production of basic pig iron for use in the manufacture of basic open hearth steel.

#### **The Company's Transportation Facilities.**

The Executive Committee, recognizing the great importance of controlling the company's own terminals and internal traffic, in order to secure proper continuity of the operations of mining and manufacturing, opened negotiations with the Louisville & Nashville Railroad and the Southern Railway Company for the purchase of the Birmingham Southern Railroad Company, and bought the property on July 1 at a price and on terms considered favorable to the Tennessee Company's interests. The Birmingham Southern Railroad owns valuable terminals, not only in the city of Birmingham, but also at Ensley, Pratt City and Bessemer, Ala., and aside from the advantage of controlling transportation in assembling raw materials for conversion, this property has great potential value.

A list is given of the properties owned and operated, showing 16 blast furnaces, of which 6 are at Ensley, 5 at Bessemer, 2 at Oxmoor, 1 at Birmingham, Ala., and 2 at South Pittsburgh, Tenn.; steel works at Ensley, comprising 11 50-ton basic open hearth furnaces, 1 250-ton primary furnace, 1 15-ton Bessemer converter, blooming mill, rail mill, &c., and in process of construction 2 20-ton Bessemer converters, 4 65-ton open hearth furnaces and a 36-in. rail mill of 25,000 tons monthly capacity; rolling mill at Bessemer, having 24 single puddling furnaces, muck mill and bar, guide, plate and fire bed mills. It also gives a list of the ore and coal properties and the location of the company's 2974 coke ovens.

The report states that the labor situation, due to scarcity of efficient common and skilled labor, has detrimentally affected operations, as the extensive construction programme under way has called for a large increase in working forces. To meet the increase demanded by enlarged mineral and manufactured output, the management adopted the policy of shipping labor from all available points, the expense of which was absorbed in costs; but with less heroic treatment operations would have been more seriously affected. "Permanent relief, however, will not be secured until intelligent labor and skilled workers can be secured by proper immigration efforts. This situation is now recognized by the State authorities of Alabama, and aggressive steps have been taken by establishing a State Immigration Bureau, the appointment of a Commissioner of Immigration and the enactment of proper immigration laws to provide for and stimulate direct immigration of desirable labor from abroad. It is gratifying to state, in this connection, that all labor troubles have been removed by the Miners' Union declaring off the strike that has been in force for several years, and labor is now peacefully employed and is receiving full competitive rates for services."

The average number of men employed in 1904 was 8690; in 1905, 10,414; in 1906, 11,857.

The unfilled orders now on the company's books represent the largest tonnage in its history. Unfilled orders as of January 1, 1907, called for the following: Manufactured iron and steel products, 467,114 tons; coal, 1,200,000 tons; coke, 201,700 tons.

**The Graham Nut Company's Extensions.**—Work is progressing rapidly on the additions which the Graham Nut Company is making to its works at Neville Island, Pittsburgh. A new building, 300 x 600 ft., of brick and steel construction, is being erected, and will be equipped with machinery that will double the present output of the company in the manufacture of nuts, machine and carriage bolts, lag screws, turnbuckles and washers. It will be ready for operation about July 1, when a large number of new hands will be employed. The company is now operating a machine shop, 30 x 260 ft.; a bolt, nut and rivet shop, 60 x 285 ft. and a power plant, 30 x 80 ft., with about 800 hp. capacity. The warehouse is 60 x 80 ft. Some changes have recently been made among officials, Charles W. Gray having been appointed assistant secretary and J. M. Stetter, formerly superintendent of the plant of the Republic Iron & Steel Company, Muncie, Ind., having been made general superintendent.

#### **Swedish Government Control of Ore Deposits.**

The Swedish Government has submitted to the Swedish Legislature proposals for a new arrangement with the object of settling the question of the iron ore deposits of Lapland. The Luossavaara-Kilrunavaara Company, which now possesses the two ore districts of that name, is to acquire the Gellivare field from the Gellivare Malmfält. The stock is to be increased to 80,000,000 crowns, the state receiving one-half in preferred shares in consideration of its right to the mines as owner of the land. Besides, the Luossavaara-Kilrunavaara Company transfers to the state the total share capital of the Mertainen Company, with a nominal capital of 5,000,000 crowns, its plant and its exclusive right to mine Luossavaara ores. This applies only to the period of 1908 to 1937 and only to the requirements of the domestic iron and steel industry. The preferred stock entitles the state to collect a royalty on one-half of the ore mined to the extent of the following amounts: From 1908 to 1927, 1 crown on Kilruna ore and 50 öres per ton on Gellivare ore; from 1928 to 1932, 1.50 crowns and 75 öres, respectively, and from 1933 to 1937 2 crowns and 1 crown, respectively. After 1937 the preferred stock participates in the profits. The state undertakes to refund any export duty on iron ore, if established, and to dismiss the pending lawsuit against the Gellivare Company.

The Luossavaara-Kilrunavaara Company thereupon only retains ownership in the Kilrunavaara and Gellivare fields. At Kilruna the company shall not mine more than 75,000,000 tons between 1908 and 1932, and can only ship 1,500,000 in 1908 on the road to the boundary of Sweden. This may be gradually increased to 3,300,000 tons, but the annual increase must never exceed 400,000 tons. The freight on the distance is 2.64 crowns per ton. The company may ship 1,200,000 tons on the line Kilrunavaara to Svarte on the Bothnian Bay at 3.48 crowns per ton, but under the condition that the total export does not exceed 3,500,000 tons. From 1908 to 1932 the company is also entitled to mine 18,750,000 tons at Gellivare and to ship to Svarte at the rate of 2.75 crowns. During the first five years the company may ship up to 1,000,000 tons annually.

At the end of 1932 the state may purchase the shares of the company at the valuation determined by a commission. If the state does not exercise this option then the company may mine and ship a total tonnage, from 1933 to 1937, of 15,000,000 tons at Kilruna and 3,750,000 tons at Gellivare. This right is secured to the company for the further period of 1938 to 1942, if the state does not exercise its option before 1937. The state has another option prior to the end of 1942. In the last named year the company has the right to ship 150,000 tons in addition to the 1,200,000 tons of export ore on the road to the Swedish border. Finally, the Grangesberg-Oxelösund Transportation Company, which owns the majority of the stock of the Luossavaara-Kilrunavaara and the Gellivare companies, undertakes to reduce the export from Grangesberg to 650,000 tons annually after the year 1908 and to 450,000 tons annually after 1917.

**Drawback on Asbestos Metallic Packing.**—The Treasury Department has promulgated a series of regulations upon the application of the H. W. Johns-Manville Company, New York, providing for the allowance of drawback of duty paid on imported asbestos cloth used in the manufacture of asbestos metallic sheet packing intended for export. The drawback amounts to the usual 99 per cent. of the duty paid on the imported material and will be paid subject to specified requirements as to the preliminary entry. In liquidation the quantity of asbestos cloth in condition as exported, which may be taken as the basis for the allowance of drawback, may equal the quantity declared in the drawback entry after official verification of exported quantities provided such quantities shall not exceed 52.6 per cent. of the net weight of the exported packing.

Westinghouse, Church, Kerr & Co. of Canada, Limited, has been incorporated with a capital stock of \$2,500,000.



### A Large Mine Hoist.

The hoisting engine, whatever may be the method used to drive it, forms the one connecting link between the surface and underground workings of a mine, which will necessarily always be vital in its operation. Strength, safety and absolute reliability of operation are the essentials required. Herewith is illustrated one of the two 32 x 72 in. Allis-Chalmers direct acting Corliss hoisting engines ordered some months ago for the mines of the Boston & Montana Consolidated Copper & Silver Mining Company, Butte, Mont., showing it as it stands practically completed on the erecting floor of the West Allis works of the Allis-Chalmers Company.

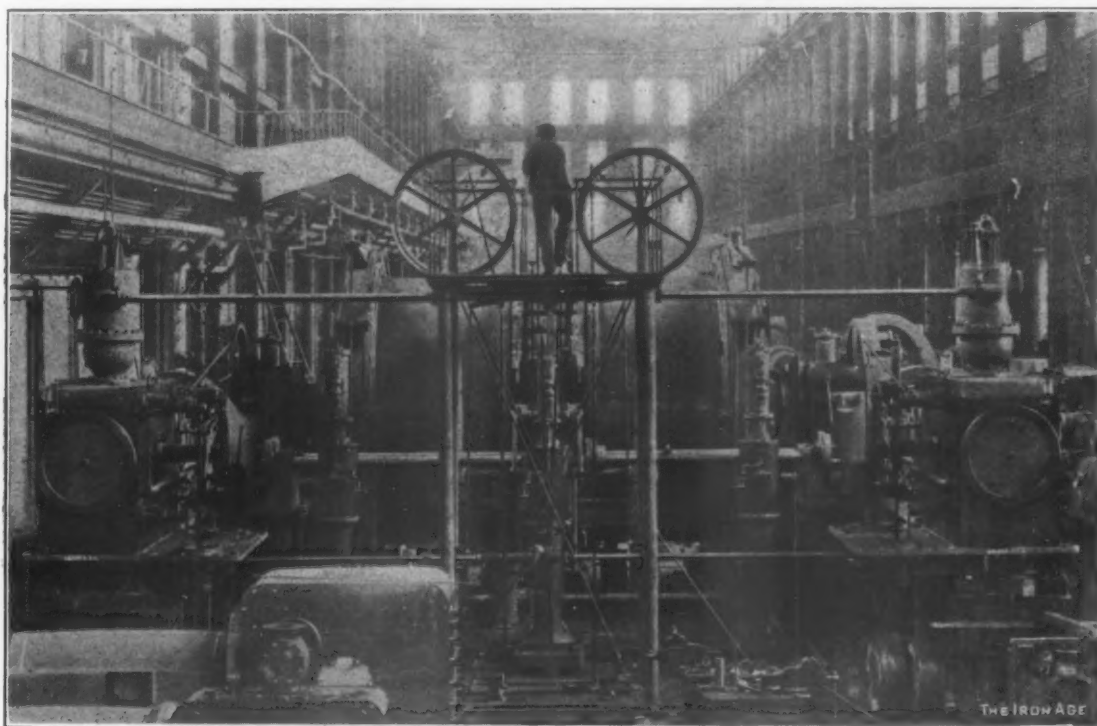
The two hoisting engines on this order are duplicates and weigh approximately 250 tons each. They are of the first motion type, fitted with automatic cut-off gear and governor, and also with complete steam reversing gear. Each crank shaft carries two steel hoisting drums, both provided with heavy friction clutches and powerful post brakes, all operated by individual steam cylinders and hydraulic oil controlling cylinders, so that either

### The Small Vessel Strength of the Great Navies.

Torpedo boat destroyers and torpedo boats, which are merely large and small editions of the same thing, with a very indefinite line of demarkation between them, are being built in large numbers by all the naval powers. At the end of 1906 there were in service or under construction no less than 1877 vessels of this character, ranging from the smallest size up to 800 tons displacement. The table shows how the eight leading naval powers are supplied, the order being that of general naval rank:

	Number.	Tonnage.	Average		Number.	Tons.
			Tons.	Speed.		
Great Britain.....	261	70,701	271	27.5	160	62,022
United States.....	52	12,463	240	27.4	26	9,097
France .....	438	51,295	117	25.6	64	20,645
Germany .....	166	30,730	290	26.5	61	24,184
Japan .....	129	26,221	203	27.9	52	18,886
Italy .....	184	23,772	129	26.0	49	13,733
Russia .....	202	32,232	160	24.9	59	19,932
Austria .....	113	14,632	129	24.1	38	10,090

The remaining 392, amounting to 39,965 tons, or an average of 102, are divided among 17 nations, of whom



One of the Two 32 x 72 In. Direct Acting Corliss Hoisting Engines Built by the Allis-Chalmers Company for the Boston & Montana Consolidated Copper & Silver Mining Company.

may be handled independently of the other or both operated in balance, as desired.

The finished hoist and its duplicate will each have a lifting capacity of 34,000 lb. from a depth of 3500 ft. They will be operated at 140 lb. steam pressure. This load includes the weight of the rope, which is over 6 tons. When working regularly at full capacity the engines will develop approximately 2500 hp. These hoists will be required to make from six to seven trips per hour, night and day.

The growing demand for steel castings is responsible for the steady enlargement of old and the building of many new steel foundries. Contemplating the inadequacy of its present plant to meet future requirements, the Milwaukee Steel Foundry Company, Milwaukee, Wis., has purchased five acres of land at West Allis, where a main foundry building 100 x 300 ft., together with all necessary auxiliary buildings, will be erected. Though plans are being perfected and arrangements for building are now being made, ground will not be broken until next year.

only nine possess more than a score each. Omitting from consideration all vessels of under 50 tons displacement, and all of under 22 knots speed, as being of comparatively small service, the eight powers have left a force as shown in the second table:

	Number.	Tonnage.	Average		Number.	Tons.
			Tons.	Speed.		
Great Britain.....	192	66,488	346	28.0	78	29,916
United States.....	46	12,030	262	27.7	25	8,401
France .....	294	42,865	146	26.6	58	17,283
Germany .....	96	28,970	302	26.8	31	12,610
Japan .....	103	24,695	240	28.4	56	18,496
Italy .....	146	22,769	156	26.3	25	8,693
Russia .....	122	27,020	221	25.9	10	2,922
Austria .....	44	10,261	233	26.6	9	3,510

Of torpedo vessels over 200 tons, England has 160; France, 64; Germany, 61; Russia, 59; Japan, 52; Italy, 49; Austria, 38, and the United States but 26. England's superiority is here very marked.

Founder's Day exercises of the C. M. Schwab manual training schools at Homestead, Pa., will be held on Thursday, May 23. It is understood that Mr. Schwab will be present, and that he has promised to furnish the money for making large additions to these schools.



### An Automatic Spring Collet Attachment for Lathes.

A chucking device for converting an ordinary lathe into an automatic spring collet machine capable of rapid and accurate chucking of either bar stock or small castings is shown in the engravings herewith. The attachment is made for any size or make of lathe or plain head turret machine not already an automatic chucking ma-

various makes and sizes. The usual operating means, as furnished on regular automatic collet machines, are provided for tightening, releasing and adjusting the spring collet.

This collet is of special design, entirely different from the regular spring collets now furnished with collet machines. It does away with the necessity of separate collets for each size of bar or stock, or with false bushings on the extra capacity size. The collet is provided with radially disposed direct thrusting spring jaws, and

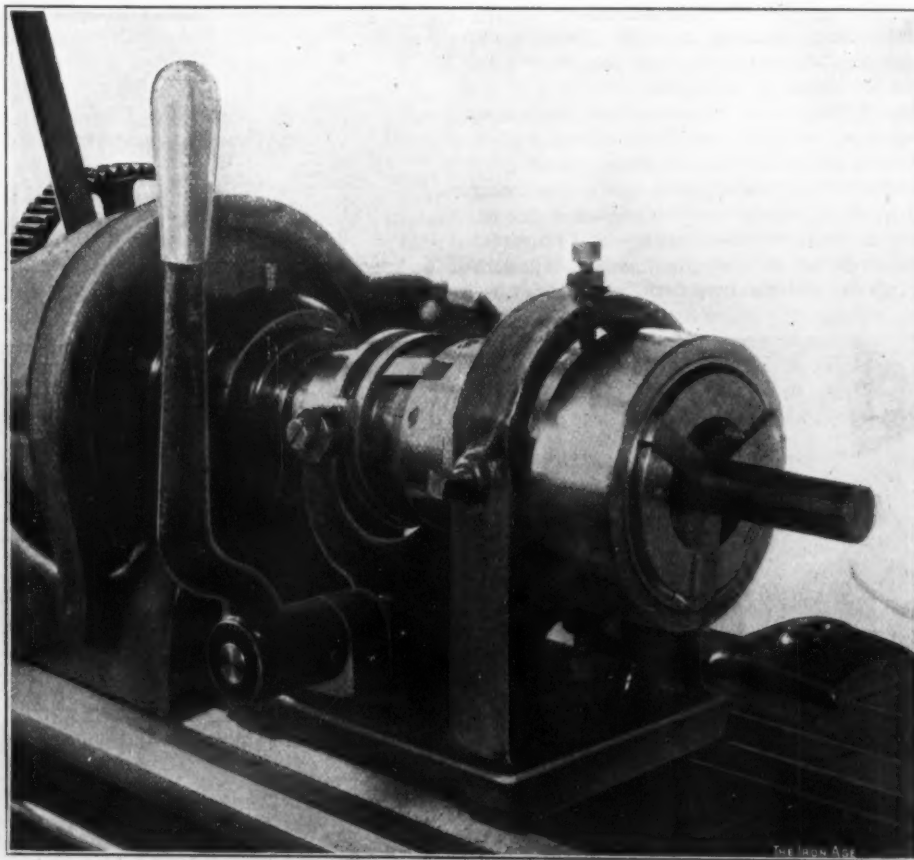


Fig. 1.—The Spring Collet Attachment Made by the Adjustable Collet Company, Cleveland, Ohio, as Applied to an Ordinary Lathe.

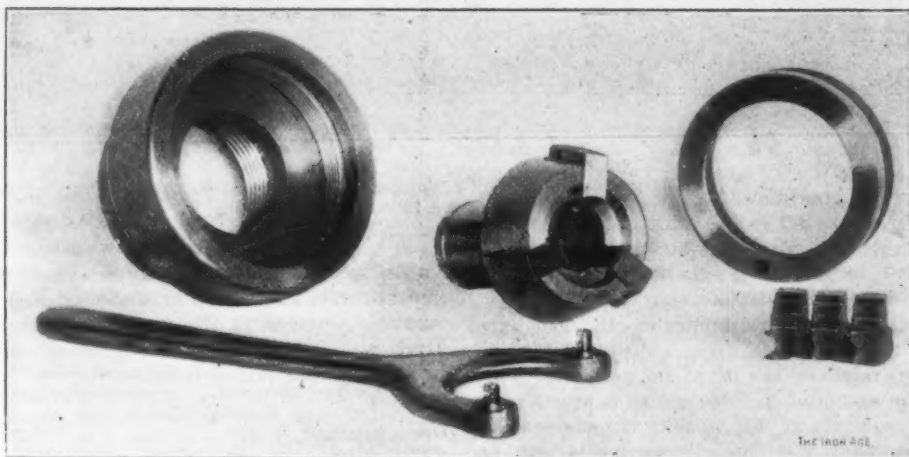


Fig. 2.—The Unassembled Parts of a Push Adjustable Spring Collet as Used on a Regular Collet Machine.

chine by the Adjustable Collet Company, 224 High avenue, Cleveland, Ohio, recently organized. It is strongly constructed, and may be quickly and easily adjusted to a machine.

The base of the attachment is flat on the bottom and can be firmly fastened to the ways of the lathe bed by a clamping bolt. The outer support has a bronze taper bearing, with take up for wear, and is provided with adjusting screws for bringing the bearing and collet in perfect alignment with the lathe spindle. The vertical adjustment of the bronze bearing in the outer support is sufficient to accommodate the attachment to lathes of

the full width of these jaws bears on the clamped stock of every size. The collet takes all sizes in fractions up to its capacity, and it is claimed requires considerably less power to grip stock firmly than does the ordinary spring collet, and is unbreakable.

The adjusting of the collet is easily accomplished and without taking it out of the machine, either when it is used as an attachment on an ordinary lathe or when used on a regular machine. By turning the screw ring on the running spindle in either direction the opening within the jaws is increased or decreased to the size to be gripped. The collets are made in push or draw form,

either with three or four jaws. The four-jaw collet is used on square or octagonal stock, and the three-jaw collet on round or hexagonal stock.

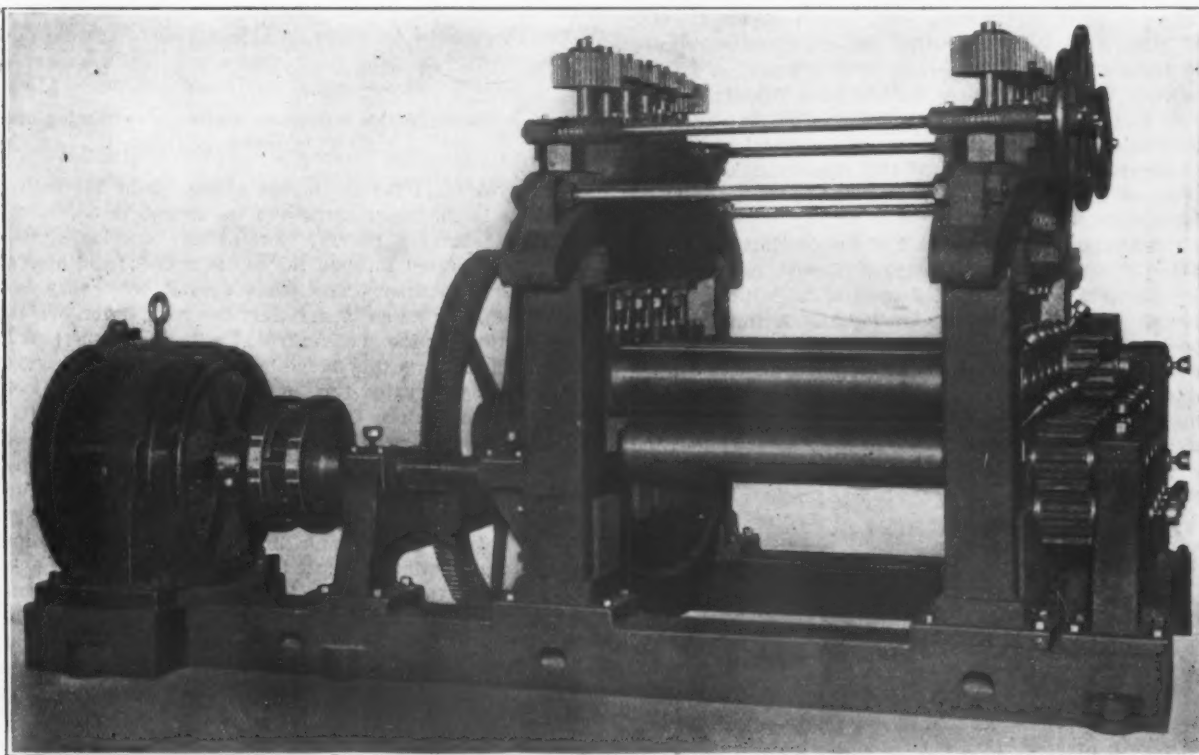
Fig. 1 shows the adjustable spring collet attachment as applied to an ordinary lathe, illustrating the manner of manipulating, and Fig. 2 shows the unassembled parts of a push adjustable spring collet as used on a regular collet machine, including in the equipment an extra capacity hood and ring and two sets of jaws—one set for bar stock and one set of step jaws for small castings. With additional fixtures attached to the spring jaws, irregular shapes can be held and operated automatically.

#### A Whiting Plate Straightener.

Strength, speed and accuracy of operation and provision for conveniently removing broken or worn parts are fundamental requirements in heavy steel and iron working tools. It has been sought to embody these features in the straightening rolls illustrated, which were de-

vent clogging of the feed sometimes occasioned by the upturned or uneven edges of the plates.

A departure from the design usually followed in the construction of similar machines is found in the arrangement of the roll bearings. For the upper set of rolls these are made in separate solid units, any one or all of which may be taken out and replaced without removing the top housings and gears. The bearings of the lower rolls are pillowed in the machine and are fitted with removable caps, which, when taken off, allow the rolls to be lifted out. All the roll bearings are held against lateral movement, the lower ones by end thrust provisions in the frame and the upper ones by the following means: Flat bars having threaded shanks, which are screwed into the top housings, extend downward through slots recessed in the adjoining faces of the bearing blocks and are secured in the top of the lower roll bearings, thus affording a resistance to end thrust for the upper roll bearings. It will be seen that by raising the upper rolls to their full height, by means of the raising and lowering gear, all



A Motor Driven Hot Plate Straightener Built for the Illinois Steel Company by the George Whiting Company, Chicago.

signed and built by the George Whiting Company, Chicago, for the new South Chicago universal plate mill of the Illinois Steel Company. Special attention has been given to affording convenient access to the roll bearings, permitting their removal when necessary, or withdrawing the rolls without disturbing the housings or dismantling the frame.

The machine is provided with 11 rolls, six on top and five on the bottom, and is built for straightening hot plates up to  $\frac{5}{8}$  in. thick at a rolling speed of 150 ft. per minute. Power for driving the rolls is supplied by a 30-hp. direct connected motor, mounted on an extension of the bed frame, and connected with the main driving shaft by a flexible coupling designed to relieve the motor from unusual shocks.

The rolls, which are 44 in. long on the tread, are turned from double hammered steel forgings, and are driven through a main gear wheel attached to the middle roll of the lower bank; this roll in turn operates the remaining rolls of this bank, and the first or feeding roll of the upper bank, through a series of pinions. In addition to the central worm geared adjusting screw, which raises and lowers all rolls of the top bank in unison, independent adjustment of the two outside rolls at either end is provided by similar screws. Plates are fed to the machine by table rolls, and these adjustments serve to pre-

bearings, both above and below, are made accessible, and in case of breakage the rolls or bearings can be removed and renewed with a minimum of labor.

All gears are of cast steel, except those operating the adjusting screws, which are cut from cast iron blanks. The entire machine is well proportioned, firmly mounted and strongly built throughout, with a view to sustaining the heavy service for which it is designed.

**Church's Analyses of Pig Iron.**—We are advised by A. L. Taylor, 9 California street, San Francisco, Cal., successor to the business of the late Seymour R. Church, that all the plates of Mr. Church's book, entitled "Analyses of Pig Iron," as well as all the copies of the book on hand, were destroyed in the great fire last year, so that it is now impossible to fill any orders for it.

The total shipments of A products by the German Steel Syndicate for March, 1907, amounted to 508,681 metric tons, computed on the steel ingot basis, as compared with 449,264 tons in February, 489,571 tons in January and 527,857 tons in March, 1906, the record month. The shipments of billets, blooms, &c., in March, 1907, were 147,944 tons; those of rails and track material 208,262 tons, and of shapes 152,475 tons.

### The McNutt Safety Gasoline Tank Filler.

Gasoline is very useful for many purposes, but, being dangerous on account of its extremely explosive nature, its use has been restricted. Now, particularly since it has become so important in the operation of portable engines, it is not so convenient to avoid using it, and inventors are turning their attention to means of rendering it safe to handle. Recently a number of patents have been granted to William H. McNutt of New York City on devices for this purpose, these including principally such as will protect containers in which the fluid is stored. In one form or another they may be combined to give safe reservoirs for supplying gasoline engines on automobiles, motor boats or in stationary operation; cans for household use, for printers and others having occasion to use it in the arts; for lamps, blow torches, stoves, &c. Fundamentally they all involve safeguarding the inlets and outlets of the containers; hence the name adopted by the company which is manufacturing and selling the devices, the Non-Explosive Safety Naphtha Container Company, 1133 Broadway, New York City.

Some mention of these devices has already appeared in these columns in connection with a report of the Exposition of Safety Devices, held in New York last February, and the work of the American Institute of Social Service in promoting the project of an American museum of security. At the time of the exposition Mr. McNutt received the award of a medal and diploma from the Institute.

The principle on which all of the McNutt devices are based is that flame will not pass through a fine meshed screen or finely perforated piece of metal, which will still permit the passing of gas or liquid. A tank with an opening covered with a piece of fine wire gauze may with impunity be filled with gasoline which is burning when it strikes the gauze, for the flame cannot pass through with the gasoline, and an explosion can only occur when a confined mixture of air and gasoline vapor is ignited. Such a simple protection would suffice, but

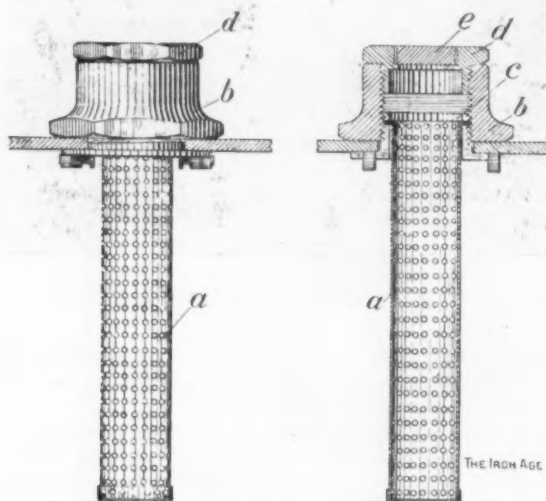


Fig. 1.—The McNutt Filler Made by the Non-Explosive Safety Naphtha Container Company, New York.

to increase the rate of filling and convenience generally, the protecting porous surface in the McNutt filler is elongated into a tube extending into the interior of the tank. To prevent the gasoline from evaporating it is necessary to close the opening after the tank is filled, and here to prevent an explosion by the generating of a high pressure if the tank should be subjected to excessive heat a stopper is provided that will open automatically at a dangerous rise in temperature. A fusible solder solves the problem. So, borrowing from the Davy mine lamp and the automatic fire sprinkler head, the inventor has contrived an absolutely nonexplosive gasoline container.

There are many variations in the details of the McNutt devices; valves, for example, sometimes replace the fusible relief opening, these being held closed by a string

that when burned in two allows the spring valve to open, and other contrivances are arranged to convey the vapor to a point where it may burn harmlessly if the pressure rises, making it necessary to allow the gas to escape. It will not be attempted in this description to cover all of the ingenious contrivances that have been developed by this inventor for similar purposes. One of the most useful and the simplest is the safety filler, already referred to and herewith illustrated. It may be applied to any tank or can intended to hold gasoline, naphtha or other highly volatile liquid, and can be attached when the tank or can is manufactured or later, as the most

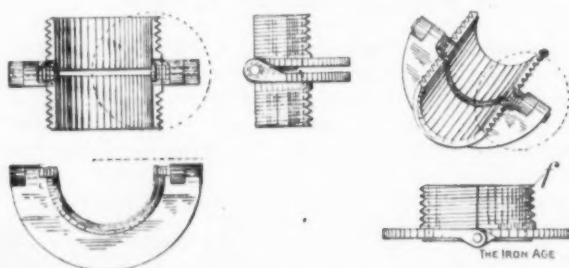


Fig. 2.—Details of the Collapsible Collar for Attaching the Filler to Tanks.

work involved is the cutting of a hole about  $1\frac{1}{2}$  in. in diameter in the upper surface of the receptacle.

Fig. 1 shows a general view of the exterior of the device as inserted through the top of a tank, and also a section of the filler. The parts consist of a very ingenious folding flange and collar, described later, which extends through the opening from the inside of the tank; a nut which draws this flange into contact with the tank, an interior perforated tube, and a cap. The sole object is to prevent flames from reaching the interior of the tank, where the gasoline being confined would explode. It is immaterial if the vapor which might issue from the tank while the cap was removed be accidentally or even intentionally lighted, for it would burn harmlessly on the outside of the tank and could be easily extinguished by smothering with the hand.

The brass tube *a* in the illustration is perforated on the sides and bottom and is open at the top, where it has a flange resting on top of the collapsible collar. This collar, as may be seen in Fig. 2, is made in two parts hinged together as shown, and provided with a spring so that the normal position is the closed one indicated at *f*. The other views show it in folded position, indicating how it may be easily inserted through an opening slightly larger than the exterior diameter of the threaded collar. Once inside of the tank it springs back and the threaded shank may be drawn up through the opening and secured by tightening the nut *b*, Fig. 1. Usually a leather washer is inserted between the nut *b* and the tank to insure a tight joint. This part in the installation being completed, the tube *a* is inserted and an internal nut, *c*, is tightened down upon the flange of the tube to hold it in position. The device is now completely installed with the exception of inserting the cap *d*, which is removed at the time of filling.

This cap is another ingenious contrivance, as it is arranged to release the pressure within the tank if the whole tank, or any part of it, is subjected to heat sufficient to vaporize the gasoline until a dangerous pressure exists within. In the cap is a circular piece, *e*, fitting a hole, in which it is held by a fusible alloy. In effect it is similar in its action to that of an automatic fire sprinkler, in that a sufficient heat will fuse the metal, allowing the cap to open. The vapor then will escape from the tank, and, although it may catch fire, it will absolutely prevent an explosion.

The San Francisco office of the General Electric Company is now permanently located in that city in the Union Trust Building. Since the fire the office has been located in the Union Savings Bank Building at Oakland, large temporary warehouses having also been erected in the same city.



## Lake Superior Ore Shipments Beginning.

DULUTH, MINN., April 27, 1907.—The blockade of ships getting into Lake Superior is over, and the first of the up-bound ore fleet reached Duluth yesterday. These ships are mostly coal laden, and will not be out with ore for some days, but the first down-bound fleet, loaded here as soon as it looked as though the Sault was about to be opened, is on the lower lakes by now. Ice has been heavy this spring, and the connecting channels were in bad shape for a longer time than usual; ice breaking boats have been employed there and the fleet was put through about the middle of the week. West of the Sault, Lake Superior was found to be blocked, and about 100 ships were stopped at Whitefish Point. The steamers engaged in breaking ice were to be remunerated at the rate of \$150 for each ship released and gotten through the Sault into Lake Superior. In preparation for the commencement of shipments on a large scale the Oliver Iron Mining Company has started its steam shovels at a few open pit mines, though weather conditions are not yet as favorable for steam shovel mining as might be wished. Ore docks at upper lake ports were filled with ore two weeks ago, and shipments have been in progress since then.

### Activity on the Mesaba.

Indications point to a greater proportion of Mesaba shipments this year than before, and the Oliver Iron Mining Company in particular is curtailing at some Old Range underground mines, where operations are costly and where many men are required for the production of a large tonnage, in favor of Mesaba mines, where the same tonnage can be maintained with a much smaller force. There are several reasons for this, not the least of them probably being the condition of labor in the mining regions. Labor is not plentiful, and wages are higher in all classes of operations. The labor cost of a ton of iron ore is heavier than in many years, especially in underground mines, where the proportion of manual labor in getting out a ton is more than in open pit properties. Many companies will push production as rapidly as they can, so that their early months shall show the utmost possible tonnage. Labor seems contented, and the Western Federation, which attempted last year to make a start on the lake ranges, is cutting very little figure now. But machine men are organized, and while no trouble is anticipated in any direction there is always the possibility, especially in such a year as the present. Chief curtailment of underground operations in line with the above tendency toward production at properties where tonnage can be produced most rapidly has been in the Ishpeming mines of the Oliver Company, where its Regent and Lake Superior groups are doing less than was locally anticipated.

### New Mines on Marquette Range.

But a far greater amount of work in the mines is under way in that district than ever in the past, taking all companies and explorations into account. Several new mines have been opened there, and some of these are looking remarkably well. This is especially true of the Mary Charlotte, which will produce 400,000 tons this year, and the Swanzy group of the Cleveland Cliffs Company. The latter will have three producers there this year. It has been running a number of drills in explorations about Swanzy for several years. Jones & Laughlin, who have been exploring the old Rolling Mill mine, east of Negaunee, in the same range, have been drifting in good ore at the depth of 700 ft., and will make some product this year out of a property that, when mined near the surface, was considered of little value.

In the same district the Maas mine, of the Cleveland Cliffs Company, which has been five years in development, has finally reached ore in the drifts and mining will begin in a few weeks. This ore body was found by extensive diamond-drilling, and the sinking of a shaft was attended with the utmost difficulty. It took 22 months to get this shaft ledged on account of the depth and character of quicksand, and an enormous sum was spent in the purchase and development of the mine. Elaborate surface improvements have been made, and the Maas

buildings are the best in the district. There is a very large body of ore in this mine, as judged by Old Range standards, and it is of good character. The shaft is 700 ft. deep, and an outfit of heavy machinery is about ready for operation. Underground connection has been made between this mine and the Negaunee, operated by the same company and owned by it jointly with the Lackawanna Steel Company, and both will make large productions this year.

### Oliver Doing Nothing on Great Northern Lands.

No effort has yet been made by the Oliver Iron Mining Company to open any of the properties included in the Great Northern ore lands for shipment this year; indeed, no orders have been received looking toward that end. It is understood that the final technicalities have not yet been carried through by the parties to the lease. It is impossible, therefore, that more than 250,000 to 300,000 tons shall be mined off these lands this year, and this must all come from the Leonard mine, a deposit near Hibbing, which has been partially stripped, but whose pit is very deep and steep, and whose ore area uncovered is quite limited. The ore surface is in bad shape this spring and must be cleaned off before any mining can be carried forward. As has been stated in this correspondence, it will be several years before the United States Steel Corporation can produce the minimum tonnages off its Great Northern leases.

Operations in the western Mesaba, on Canisteo lands, at the Coleraine mines, are proceeding rapidly, and an enormous amount of work is being done in stripping, building washeries, erecting a model town and preparing for the tremendous work to be carried on there later. But the tonnage to come off these lands will not be as large this year as has been generally expected; the time required to open mines and make experiments in washing has been more than was looked for by most. The initial washery has been working successfully, and with a few changes that are planned for other units will undoubtedly treat these ores well and at very slight costs, making a most excellent product for the furnace.

W. B. Dickson and other members of the Steel Corporation Committee, to whom has been referred the matter of a steel works at Duluth, have been in this city again, and have looked over sites for the works. No decision has been announced, and it may require a third visit. Matters connected with the works are reported as moving successfully, and it has been announced that, in connection with the furnaces, there will be a cement mill with a capacity for 2500 bbl. per day. One of the chief points for cement consumption in the United States is the section comprising the Northwestern States of Iowa, Minnesota and the Dakotas, and these can be supplied by a mill at Duluth better than any other point. D. E. W.

### The Youngstown Sheet & Tube Company's Extensions.

—The Youngstown Sheet & Tube Company, Youngstown, Ohio, is constantly making large additions to its plant and considerably increasing its capacity. This company has recently built 22 more puddling furnaces, giving it a total of 50 puddling furnaces, which is believed to be the largest single puddling plant in the country. This increase in puddling capacity has been necessitated by the heavy demand for double refined puddled iron roofing sheets and iron pipe, casing and tubing, particularly for oil and gas lines. These puddling furnaces are equipped with waste heat boilers, and all the muck bar made is consumed in the company's finishing mills. Contracts have recently been placed for the building and equipment for another bell weld pipe furnace; also a large new coupling shop and tube works machine shop. The company is running its Bessemer plant, skelp and pipe mills, puddling department and sheet mills to full capacity and has more tonnage on its books than at any former period in its history.

James J. Hill pointedly remarks: "Railroad investments should be encouraged, not discouraged, because the prosperity of the country is dependent upon that of the railroads no less than the prosperity of the railroads is dependent upon the prosperity of the country. They are partners."





castings made by various patented processes the total production in 1905 was 6391 tons.

The comparison between 1905 and 1906, therefore, is substantially one between the figures representing the output of acid and basic open hearth castings. The exhibit by groups of States is as follows:

*Production of Acid and Basic Open Hearth Castings in the United States in 1905 and 1906.—Gross Tons.*

	1906.		1905.	
	Acid.	Basic.	Acid.	Basic.
New England, New York and New Jersey.....	50,977	38,533	34,528	24,679
Pennsylvania .....	275,958	24,040	217,619	16,669
Ohio, Indiana, Illinois and other States.....	80,468	243,181	68,234	164,811
Totals.....	407,403	305,754	320,381	206,159
	1906.		1905.	
New England, New York and New Jersey...	89,510		59,207	
Pennsylvania .....	299,998		234,288	
Ohio, Indiana, Illinois and other States....	323,649		233,045	
Totals.....	713,157		526,540	

The St. Louis District steel foundries, with their heavy outputs of engine frames, car trucks, bolsters, couplers, knuckles and other standardized castings for railroad uses, have brought up the total of basic castings in a remarkable way in the past year. The basic furnace gives a larger range in the selection of materials, and the ability of the St. Louis District to draw at favorable freight rates on the Southern blast furnaces, while at times it gets advantageous delivered prices on basic iron from Ohio furnaces, puts it in position to make good headway in the development of basic practice. It will be seen that the Central Western States added only 12,000 tons in 1906 to their 1905 output of acid castings, while the basic output advanced about 80,000 tons, or nearly 50 per cent. On the other hand, Pennsylvania, the original home of the steel foundry, added less than 8000 tons last year to its output of basic castings, while in acid production it advanced from 217,000 tons to 276,000 tons. Of the entire output of open hearth castings the basic furnace contributed three-sevenths, or 42 per cent., while in 1900 it had but 25 per cent. of the total, and in 1903 only one-third. The total of steel castings by all processes in 1906 was not far from 760,000 gross tons, as compared with 560,000 tons in 1905. This increase of 36 per cent. in one year compares with a 10 per cent. increase in pig iron production for 1906 and a 15 per cent. increase in steel ingots and castings. In gray iron castings the production last year, gauged by the output of foundry iron, and not omitting importations of foundry grades, exceeded by considerably less than 10 per cent. the gray iron castings total of 1905. Thus 1906 gave marked emphasis to the increasing vogue of steel castings, presumably in part at the expense of gray iron.

#### Abuses of the Follow-Up Letter System.

Complaint is frequently heard that the follow-up system of letter writing is being carried to such lengths as to become an exasperating nuisance. Business men assert that to receive letter after letter of no pertinence to anything under consideration and intended only to cultivate new trade for the house employing the system, has the tendency to cause irritation which may lead to positive prejudice. The criticism, however, strikes not so much at the follow-up system as at its unskillful use. It is undoubtedly overdone in some cases. No effort is made to discriminate and to keep sharp watch for instances where it is doing harm. The fact is forgotten that the business man resents nothing more than that which makes unnecessary inroads upon his time.

A great many business houses are scrupulously careful

about answering their letters. They insist upon promptness and the courteous treatment of all correspondents. There always will be a few concerns that pay scant attention to the answering of letters unless there is actual direct connection with business, but these are notably exceptional, for it is getting to be almost universally understood that it pays well to give promptly to correspondents the information desired, or at least to send an acknowledgment. The follow-up system places a strain upon letter answering. Under the rule each letter as it is received should be answered, but when they arrive with periodical frequency, carrying out a publicity system, it may come to be greeted with impatience and finally classed as an exception and placed with other trade literature requiring no answer.

The follow-up system, judiciously employed, is an excellent one, but like many other business practices, it may be harmful if it is not skillfully directed. Discriminating attention by some one with a comprehensive knowledge of conditions should be given the system at frequent intervals. The mailing list should be selected with great care, and answers or lack of answers carefully recorded. Especially should replies be scanned for signs of annoyance or impatience. Entire failure to answer should be taken into account as an indication that the letters are not doing the work they are intended to perform. If the system is employed in connection with a corps of traveling men the latter should be prompted to make careful observation of results, whether good and bad. Names should be dropped from the mailing list at the first sign that their owners do not welcome the letters. The possibility should never be lost sight of that the system may be doing harm. The fact seems sometimes to be forgotten that there is a great difference between a follow-up trade literature system and the letter writing scheme. The latter may be considered as containing a certain element of deception, because it is a kind of advertising in the guise of a business letter. Trade literature proper speaks for itself. But a letter, presumed to bear upon routine business of the day, may be tossed aside with impatience and classed as an annoyance, and consequently has done harm instead of good.

#### Foreign Inventors and British Home Industry.

A bill recently introduced in the British Parliament proposes radical amendments to the patent laws of the United Kingdom, including the very important provision that failure to work a patent shall mean its revocation, if application to that effect be made. The passage of such an act in this or in a modified form similar to the laws in force in most of the countries of Continental Europe would have its influence upon certain American industries, which hold British patents protecting them against the British manufacturers themselves, just as the patent laws of the United States protect the invention of a British or other foreign manufacturer against its use in our home industries. Practically all of the Continental countries have provisions in their patent laws permitting the use of patented inventions which are not worked in the country issuing the protection to the inventor, but the patent is not invalidated by such action, and, according to the general practice, it may be re-established in full force by being put into industrial use by its inventor or his assignee.

Apparently there is a strong feeling in Great Britain that some such amendment as indicated should be made to present laws. The London *Engineer* probably voices important influences when it states concerning the pro-



posed measure: "We trust such a majority may be found in its favor—in an amended form—as will indorse the new principle, which is the most important feature of the measure. This principle is that the patent laws of this country are intended to act for the welfare and benefit of the industries of this country. We believe that a majority of thinking people have generally accepted that idea in preference to the narrower conception that the patent laws are designed for the benefit of the patentee or inventor; but in one respect at any rate it has never been acted upon. We have allowed goods manufactured abroad to be imported into this country under the protection of a British patent, and for years we have failed to recognize that injury was thereby being done to British industries."

The bill as it stands provides that "any time, not less than three years after the grant of a patent, any person interested may apply to the comptroller for a revocation of the patent on the ground that the patented article is manufactured exclusively or mainly outside the United Kingdom. The comptroller may consider the application, and unless the patentee proves that the patented article is manufactured in the United Kingdom, or gives satisfactory reasons why the article is not manufactured, the comptroller may revoke the patent, either forthwith or after such reasonable interval as may be specified in the order, unless in the meantime it is shown to his satisfaction that the patented article is manufactured to an adequate extent in the United Kingdom." The comptroller may at his discretion give the patentee an extension of not exceeding 12 months.

This provision is generally considered rather too drastic, as containing possibilities of injustice to the inventor, especially if he be of small means. An alternative proposed in lieu of revocation is that "after a lapse of two years from the granting of the patent, if the patentee or his licensee is not working the invention, then anyone else may employ it. At the end, however, of another two years, or any succeeding biennial period, if the patentee or his agents have begun to manufacture they may bring the matter before the comptroller or the courts, who shall decide what is a fair royalty to be paid for the past or future use of the patent." The matter of compulsory royalties already embodied in the present patent laws come up for consideration in the bill as introduced, extending the provisions pertaining to the subject for the benefit of the country at large.

As we understand the intent of the proposed changes in the British laws, they are not intended to strike specially at American industries, but are designed to act as a protection against certain European nations, notably Germany, whose manufacturers have been invading the British markets with goods, especially chemical compounds, which home manufacturers cannot make because of the existence of patents. But, nevertheless, American inventions, patented in the United Kingdom but not made within that territory, are imported into the country, perhaps to the detriment of British industries and certainly to the profit of American manufacturers. The effect of the proposed law, if it receives the sanction of Parliament, may be the establishment of more British branches of American industries, and the sale of patent rights for the United Kingdom, already a common practice, will be extended. Similar provisions in due time may be embodied in the patent laws of the United States, in order that foreign inventions shall either be worked here by their owners or opened to use in American industries. It is, however, not at all certain that the act before Parliament will become a law at this time. Similar at-

tempts have been made in recent years without success. But it is understood that public sentiment has been aroused by results of the existing law detrimental to British industrial interests, and, as the *Engineer* suggests, popular sentiment is turning to the standpoint that patent laws should act for the benefit of the public through a country's own industries, instead of being primarily for the advantage of the foreign inventor.

### March Exports and Imports of Iron and Steel.

Both exports and imports of iron and steel for March show an increase, as compared with the preceding month. The report issued by the Bureau of Statistics of the Department of Commerce and Labor gives the total value of exports of iron and steel and manufactures thereof, excluding ore, for that month at \$16,412,616, against \$13,946,042 in February, while the corresponding figures for imports are respectively \$3,702,000 and \$3,020,986.

The export figures for commodities for which quantities are given show 112,758 gross tons in March, as compared with 87,908 tons in February. The following table gives the exports of such commodities for March and for the nine months ending with March in 1907 and 1906:

Commodities.	March,		Nine months,	
	1907.	1906.	1907.	1906.
	Gross tons.	Gross tons.	Gross tons.	Gross tons.
Pig iron.....	7,306	8,648	63,505	39,929
Scrap.....	1,730	284	10,606	7,451
Bar iron.....	783	4,813	37,604	26,814
Wire rods.....	5,775	994	8,395	4,615
Steel bars.....	3,540	2,659	27,966	15,314
Billets, blooms, &c....	14,343	28,421	93,944	212,886
Hoop, band, &c.....	667	65	5,194	4,042
Iron rails.....	.....	.....	.....	.....
Steel rails.....	25,384	35,431	221,019	257,179
Iron sheets and plates.	2,736	810	20,000	7,231
Steel sheets and plates.	9,172	7,395	71,881	51,325
Tin plates andterne plates.....	825	1,352	4,262	5,298
Structural iron and steel.....	12,104	10,130	90,401	67,447
Wire.....	13,129	14,924	123,374	114,290
Cut nails.....	342	684	5,352	5,343
Wire nails.....	4,208	5,581	29,082	31,723
All other nails, including tacks.....	701	163	5,105	2,775
Pipes and fittings....	9,953	16,770	94,227	113,416
Totals.....	112,758	139,124	911,917	967,048

In the above table billets, blooms, &c., show an increase of over 10,000 tons, steel rails over 5000 tons, structural iron and steel over 3000 tons and pig iron over 2500 tons, as compared with February.

The imports of commodities for which quantities are given show a total of 70,611 gross tons in March, as compared with 60,700 tons in February. The quantity imports for March and for the nine months ending with March in 1907 and 1906 were as follows:

Commodities.	March,		Nine months,	
	1907.	1906.	1907.	1906.
	Gross tons.	Gross tons.	Gross tons.	Gross tons.
Pig iron.....	55,692	32,282	387,694	197,301
Scrap.....	502	733	13,296	22,721
Bar iron.....	2,659	1,357	30,055	31,070
Rails.....	395	5	3,524	8,439
Hoop, band, &c.....	.....	2,981	4,058	7,722
Billets, bars and steel in forms n.e.s.....	1,207	1,756	15,230	14,466
Sheets and plates....	256	239	2,777	2,012
Tin plates andterne plates.....	7,268	6,005	45,407	40,955
Wire rods.....	1,459	1,340	13,134	13,814
Wire and articles made from.....	940	437	6,192	2,891
Structural iron and steel.....	233	5,962	8,588	26,217
Totals.....	70,611	53,097	529,955	367,608

The total exports of all kinds of iron and steel and manufactures thereof, not including ore, were valued at \$132,019,206 in the nine months ending with March, as compared with \$116,280,765 in the corresponding period of the previous year. The imports for the same period were respectively valued at \$31,296,823 and \$20,749,674. The imports of iron ore in March were 75,997 gross tons, as compared with 101,799 tons in February.

## OBITUARY.

**WILLIAM H. DERBYSHIRE**, president of the Chambersburg Engineering Company, Chambersburg, Pa., died April 13, aged 48 years. He was born in Canton, Ill., was graduated from the Polytechnic College of Pennsylvania in June, 1877, was with the John Roach & Son Shipbuilding & Engine Works, at Chester, Pa., from 1877 to 1879, and with Frederick B. Miles at his machine tool works, Philadelphia, from 1879 to 1885. When Mr. Miles and Wm. B. Bement & Son consolidated as the firm of Bement, Miles & Co. he went with the new concern as general superintendent and remained until 1897, when he formed the Chambersburg Engineering Company, and was president of this company until his death. Mr. Derbyshire was an authority on smith shop and boiler shop equipment, and after he organized the Chambersburg Company he gave his entire time and attention to this class of machinery. He had taken out many patents on hydraulic equipment, one of them best known to the trade being his system of quick acting hydraulic riveters and presses, the merits of which have created a great demand for them. Steam hammers of his design also contain many points of merit, especially steam drop hammers, which he brought up to a high state of perfection. The works under his management grew from a very small plant to an extensive machine shop, a large iron foundry and an open hearth steel casting foundry of large capacity, and at present over 400 men are employed. Although his death will be a great loss to the company, he had associated with him a well trained force of skilled mechanics and engineers, who will carry on the business as he had planned.

**JOHN T. FRAWLEY**, secretary and treasurer of the Tod-Stambaugh Company, Cleveland, dealer in iron ore, died April 17, aged 61 years. For nearly 40 years Mr. Frawley was connected with the Tod-Stambaugh Company, and its predecessor, Tod, Stambaugh & Co., and was equally well known in vessel and iron ore circles, having had charge of the chartering of vessels for his firm.

**CHILTON C. M. FARRAR** of the well-known Buffalo, N. Y., firm of Farrar & Trefts, engine builders and founders, died April 17, aged 77 years. He was born in Detroit, and went to Buffalo at 18, learning the molder's trade there. He was superintendent for a time of the Shepard Iron Works, having as an associate there John Trefts, who later became his partner. The Farrar & Trefts foundry and machine shops were established in 1867 for the manufacture of tug and other marine engines. Mr. Farrar was the inventor of a number of important improvements on engine designs then current, and the engines of his firm were particularly in demand in the development of the western Pennsylvania oil fields. Mr. Farrar is survived by his widow and a daughter.

**JOHN JOSEPH CONRAD KEPPELMAN**, one of the best known of the foundrymen in Reading, Pa., died April 27, aged 80 years. He located in Reading in 1850, and established a foundry. With H. Crecelius and Christian Stoltz he conducted the Union Foundry on the site of the present Carpenter Steel Works. He retired 20 years ago. He was a native of Karlsruhe, Baden.

**GEORGE J. MCKINNIE**, one of the best-known business men of Cleveland, Ohio, died April 28, aged 77 years. He was one of the founders and the first president of the Cleveland Telephone Company; founder of what became the Cleveland Electric Lighting Company; director in the New York, Pennsylvania & Ohio Railroad Company and the Pittsburgh & Toledo Railroad Company; a member of the firm of Andrews, Hitchcock & Co., coal dealers, and president of the former Playford Stoker Company. He was collector of the port of Cleveland under President Cleveland and later was director of charities and president of the infirmary board of Cleveland.

**PATRICK J. GERAGHTY**, secretary and treasurer of the Griffin Wheel Company, died April 30, after a brief illness, at his home in Chicago. He was widely known in the iron and steel trade, having been connected with the Griffin Wheel Company since 1885.

**WILLIAM J. JOHNSTON**, publisher of the *American Exporter*, died suddenly from cerebral hemorrhage April 28

at his home in New York. He had just returned from Washington and appeared to be in perfect health when seized with the fatal attack. Mr. Johnston had had a long experience in trade journalism, covering many years with the *Electrical World* and a considerable period with the *Engineering and Mining Journal*. His son, Edwin C. Johnston, is connected with the *American Exporter* as business manager.

## PERSONAL.

C. B. Ault has resigned as sales manager of the Homestead Valve Mfg. Company, Homestead, Pa., to enter another line of business, and has been succeeded by P. L. Rhodes.

President F. F. Prentiss and Vice-President J. D. Cox of the Cleveland Twist Drill Company, Cleveland, Ohio, have gone on a three months' business and pleasure trip to Europe. They will spend six weeks in visiting the company's agents in various European cities and the remainder of the time in a pleasure tour of points of interest in England, Scotland, Ireland and Wales.

William Fair has been appointed superintendent of the Haselton furnaces of the Republic Iron & Steel Company, and George Shook has been appointed superintendent of the Hannah Furnace at the Valley Works.

J. T. Gibson has resigned as superintendent of the Carnegie Steel Company's furnaces at Steubenville, Mingo and Bellaire, Ohio, and W. C. Molten has resigned as superintendent of the Mingo plant under Mr. Gibson.

S. G. Valentine, Sr., who for eight years has been assistant general manager of the Dunbar Furnace, Dunbar, Pa., has resigned that position to become manager of the blast furnaces of the Burden Iron Company, Troy, N. Y. On his departure from Dunbar he was presented with testimonials of esteem by the workmen and also by the business people of the town.

W. H. Hogland, formerly general superintendent of the plant of the Findlay Axe & Tool Company at Findlay, Ohio, has resigned.

S. M. Wetmore has been appointed general superintendent and J. T. Rowley superintendent of mills of the Carbon Steel Company at Pittsburgh.

Geo. E. Hardy has resigned as manager of the Pamlico Iron Works, Washington, N. C., with which he has been identified for five years, and moved to Newport News, Va. W. M. Boase, a partner in the business, becomes manager.

Arthur H. Buhl has been elected president of the Buhl Malleable Company, Detroit, Mich., to succeed his father, the late Theodore D. Buhl. Mr. Buhl has also been made vice-president and general manager of the Buhl Sons Company, of which his brother, Willis E. Buhl, has just been elected president. Leon Smith has been made a member of the Board of Directors.

Alexander Yule, secretary of the De Camp Brothers & Yule Iron, Coal & Coke Company, St. Louis, goes to Europe for a brief trip in which he will visit a number of iron and steel plants in Great Britain.

S. S. Knight, who for the past two years has been superintendent of Abendroth Brothers' manufacturing plant at Port Chester, N. Y., has been appointed general manager of the Huntington plant of the Globe Foundry Company, Huntington, W. Va., assuming his new duties May 1.

W. H. Von Mengerinhausen, for several years manager of the Bloomsbury Foundry & Engineering Works, has been elected general manager of the Catasauqua Castings Company, Catasauqua, Pa., and entered upon his new duties April 15.

Horace T. Frizelle, who was for several years connected with the purchasing department of the Colorado Fuel & Iron Company, Denver, Colo., and for the past 10 years with the Bradstreet Company, New York, has been appointed purchasing agent of the New York Engineering Company, United States Express Building, 2 Recor street, New York.



## Recent Customs Decisions.

### The Ferroalloy Duty Again to be Tested.

WASHINGTON, D. C., April 27, 1907.—The Treasury Department has decided to revive the controversy regarding the dutiable classification of the steel-hardening alloys known as ferrochrome, ferrotungsten, ferromolybdenum and ferrovandium by bringing a new case based upon a recent importation at an Eastern port of entry. The original dispute dates back nearly to the enactment of the Dingley Tariff law, but was thought to have been finally settled nearly two years ago as the result of an important victory by the importers in the United States Circuit Court of Appeals and the refusal of the Attorney General to apply to the United States Supreme Court for a writ of certiorari.

#### THE QUESTION AT ISSUE.

The original test case was brought by the Roessler & Hasslacher Chemical Company, which imported a large quantity of these products at the port of New York, where they were assessed for duty as "metals, unwrought," at 20 per cent. ad valorem, under paragraph 183 of the tariff act. This assessment operated in the case of some of these products to levy a duty of more than \$100 per ton and it was claimed would have been absolutely prohibitory if sustained. None of the articles was specifically mentioned in the tariff act of 1897, but the importers invoked the so-called similitude clause of the tariff law, claiming that all these articles were dutiable at \$4 per ton under paragraph 122 by similitude to ferromanganese.

Upon the record in the case the Board of General Appraisers overruled the action of the collector and sustained the protest of the importer, whereupon the Government appealed to the United States Circuit Court. In this court the issue was examined in much detail and considerable additional evidence was taken. Here, again, however, the Government lost, and the case was finally presented to the Circuit Court of Appeals. In this tribunal the importers won a decisive victory, the court handing down an opinion adverse to the Government on all points and laying down certain principles with regard to the classification of mineral substances of a metallic character that are regarded as of great importance. In discussing the contention of the Government that the articles involved in the case were unwrought metals the court said:

The ordinary meaning of "wrought" is worked up, elaborated, worked into shape, labored, manufactured, not rough or crude. "Unwrought" imparts the reverse of these conditions. When one speaks of an unwrought material he means one which has not been worked into shape—one which is unlabored, unelaborated, rough and crude. But the word also implies a material which is capable of being transformed from its crude condition to an improved condition, produced by the labor to which it may be subjected. To be more specific, "unwrought metal" implies a metal which is capable of being wrought and not a substance which is fit only to be thrown into the crucible to be melted up with other ingredients to produce an entirely different and distinct product.

#### COULD NOT BE "WROUGHT."

Continuing, the court quoted the evidence of several witnesses to the effect that the product imported could not be independently wrought into anything. One distinguished chemist testified that while ferrochrome could not be manufactured into any other product it was largely used as a mordant in dyeing. Other witnesses also testified that, while the products imported were chiefly used in metallurgy, their purpose was to lend certain physical characteristics to other metals, such as steel, and that unless so used they were not capable of being wrought. The court then took up the question as to whether these products were similar to ferromanganese and laid down an interesting rule for the application of the similitude clause of the tariff act. In this connection the court said:

The counsel for appellant have taken pains to point out numerous instances wherein the two articles differ, but it must be borne in mind that the statute does not require identity; if that were necessary the statute would have no *raison d'être*. It is enough if there be a substantial similitude in any one of the

particulars mentioned—material, quality, texture or use. Ferrochrome and ferromanganese look alike; even the experts are unable to tell them apart, and they are similar in quality and in use, notwithstanding the fact that they produce different results and are not applied at the same stage of the process of making steel. We agree with the expert for the appellee when he says that the "steel that is made by the use of these other ferros is along the same lines as the steel produced by the use of ferromanganese. There are differences, but the qualities imparted are of the same general family."

The Court of Appeals having sustained the court below, the Treasury Department, under the spur of certain domestic producers of ferrochrome, sought to have the case reviewed by the United States Supreme Court and requested the Attorney General to apply for a writ of certiorari. The officials of the Department of Justice made an unusually thorough investigation of the case, however, and after careful consideration the Attorney General advised the Secretary of the Treasury that he could not see his way clear to applying for the desired writ, whereupon the case was closed and the excess duties collected were refunded to the importers.

#### NEW EVIDENCE DISCOVERED.

The Treasury Department recently received information to the effect that testimony is now available showing that certain of the products referred to are actually capable of being worked or "wrought," within the meaning of the tariff act, and that they are employed in rapidly increasing quantities in the manufacture of certain grades of steel. On the strength of this information it has been decided to make a new case, and instructions have therefore been issued to the collector at an Eastern port who has succeeded in making up a record as to an importation that presents squarely the issue the department now desires to test.

While the Treasury Department is moved by a very laudable desire to secure as much revenue as possible from these products, and incidentally to protect the domestic manufacturers thereof, the importers and consumers are preparing to care for their own interests as skillfully and thoroughly as was done in the original test case. The contest will be vigorously waged at all stages and in view of the importance of the principle involved and of the satisfactory condition of the record in the new case it is probable that the issue will finally be carried to the United States Supreme Court.

In the meantime, with a view to harmonizing the practice at all ports, Assistant Secretary Reynolds has promulgated an order directing collectors throughout the country to ignore the decision of the Circuit Court of Appeals and to assess the products referred to under paragraph 183 of the tariff act at 20 per cent. ad valorem.

W. L. C.

### Important Customs Decisions Accepted.

WASHINGTON, D. C., April 30, 1907.—The Treasury Department has decided to acquiesce in the decisions of the United States Circuit Court of Appeals for the second circuit in the case of the United States vs. Crucible Steel Company, involving the duty on polished steel, cold rolled, smoothed only, and of the Circuit Court of Appeals for the first circuit in the case of the Burditt & Williams Company vs. United States, involving the duty on rat traps made from steel wire coated with copper. The determination to accept these two decisions has been reached with some reluctance, and in promulgating this acquiescence in the decision regarding rat traps customs officials will be directed to disregard the principle of statutory construction laid down by the court as a basis for its decision.

#### COLD ROLLED STEEL STRIPS.

The case before the court involving the duty on polished steel strips designed for the manufacture of springs is the second to be ruled upon by the Court of Appeals in which the same parties were involved. The first case did not present an issue upon which the Government cared to apply to the United States Supreme Court for a writ of certiorari, but a second test case was brought in the same jurisdiction upon another consignment of steel brought in by the same importers. The question at issue was whether the polished surface of the metal was merely the result of cold rolling or whether it was acquired through



special manipulation. A large number of samples were brought to Washington while the second case was pending, and the department officials felt confident that trade testimony could be produced showing that the highly polished steel strips imported at New York had been subjected to a special process. When the case came to trial, however, the desired testimony was not forthcoming and the Court of Appeals held that the new evidence introduced by the Government failed to differentiate the case from that which was before it in the first instance. In view of the condition of the record no issue is presented upon which to base an application for a writ and with the acquiescence of the Attorney General no further steps will be taken. It is extremely improbable that another test case will be made.

#### WIRE RAT TRAPS.

The case of the Burditt & Williams Company vs. the United States, involving the dutiable classification of wire rat traps made from steel coated with copper, presents two important issues: 1. Whether under the provision of Section 137 triple duties can be assessed on the importation; and, 2, whether "a formal ruling of the Treasury Department supported by five years' continuous, uniform and universal practice, with reference to the construction and practical operation of a doubtful statute, is, as against the Government, controlling as to the effect of such statute." Paragraph 137 assesses various rates of duty on steel wire subject to the following proviso:

Provided, that articles manufactured from iron, steel, brass or copper wire shall pay the rate of duty imposed upon the wire used in the manufacture of such articles, and in addition thereto 1¼ cents per pound, except that wire rope and wire strand shall pay the maximum rate of duty which would be imposed upon any wire used in the manufacture thereof, and in addition thereto 1 cent per pound, and on iron or steel wire coated with zinc, tin or any other metal 0.2 cent per pound in addition to the rate imposed on the wire from which it is made.

The rat traps in question were made of steel wire coated with copper and the question before the court was whether on account of the wire being coated the traps were subject to the additional duty of two-tenths of 1 cent per pound specified in the proviso. The court was inclined to rule that Congress did not intend to levy a triple duty on the rat traps, but based its decision upon a ruling of the Secretary of the Treasury promulgated September 7, 1900, in which it was held that the additional duty of two-tenths of 1 cent per pound was not to be imposed upon heddles manufactured of wire, tinned. This decision, uniformly followed since the date of its promulgation, the court holds establishes a practice which cannot be overturned, especially in view of the conceded ambiguity of the statute.

The department is willing to accept the decision so far as it deals with the effect of the proviso to paragraph 137, but it is entirely unwilling to concede that departmental practice in the construction of the tariff act, no matter how long it may have continued, is in any way binding to the extent that it cannot be reversed whenever the customs authorities reach the conclusion that they have been in error. While the case at bar will not be the subject of any further litigation, the department will decline to accept the principle of construction laid down by the court and will continue to modify its rulings from time to time in accordance with such information as it may secure.

W. L. C.

#### Duty on Scrap from Panama.

In order to determine for tariff purposes whether the Panama Canal Zone is American territory or not the David Kaufman & Sons Company has instituted suit before the Board of United States General Appraisers in a tariff dispute concerning the admittance of scrap iron and steel discarded by the engineers at Panama. During the progress of the construction of the canal large quantities of worn out material will be condemned and eventually shipped back to this country. In view of this fact importers of the materials desire the free entry of the merchandise. Notwithstanding the fact that Congress, by the act of March 2, 1905, expressly provided that "all laws affecting imports of articles, goods, wares and merchandise and entry of persons into the United States from foreign countries shall apply to articles, goods, wares and merchandise and persons coming from the Canal Zone, Isthmus of Panama, and seeking entry into

any State or Territory of the United States or the District of Columbia," the importers raise the point of unconstitutionality against the law. It is expected that after the Board of Appraisers has passed upon the question it will, regardless of the finding of the lower customs tribunal, go into the Federal courts, eventually reaching the Supreme Court.

The test suit resulted from the action of the Collector of Customs at Newark, N. J., assessing importations from the Zone made by the company, at the rate fixed under the provisions in the tariff for "scrap iron and steel." While contending that the act of Congress is unconstitutional, in so far as it designates the Zone foreign territory for tariff purposes, the importers, nevertheless, claim in their official protest that, regardless of the primary question, the importations are free of duty as "junk," this commodity being on the exemption list of the present revenue law. Another claim made is that the scrap material is American merchandise returned.

According to information placed before the Board of Appraisers by representatives of tool and engineering firms, supply firms and other contractors, the Isthmian Canal Commission had given assurance that material returned from the Zone would be accorded free entry at New York and other ports. On the strength of this assurance, it is learned, many concerns have made contracts which will be affected adversely if the position assumed by the customs authorities is finally affirmed by the courts. It is expected that the lower tribunal will render a decision soon, after which the issue will be taken into the Circuit Court and thence up. In this connection it should be recalled that the status of the Philippines, Porto Rico and the Isle of Pines has been defined by the Supreme Court as a result of suits brought by importers for the recovery of duties alleged to have been illegally levied.

#### No Bonus for Canadian Ships.

TORONTO, April 27, 1907.—Contrary to expectation, the Dominion Government did not this session bring in a measure to promote shipbuilding in Canada. As has been previously noted in this correspondence, influential deputations waited on the Prime Minister and Finance Minister to lay before them considerations in support of a petition to grant a bonus of \$6 a ton on vessels built in Canadian yards. The case had been presented with great cogency by the representatives of the shipbuilding industry in their memorandum to the Tariff Commission. Even stronger were the arguments submitted in the memorials of the maritime interests and those of the shipbuilding interests on the Great Lakes. As the plea was for the most part warmly supported by the press of the country, irrespective of party, there was reason to believe that the Government would take favorable action, especially as the Finance Minister seemed well disposed toward the idea. At almost the last moment of the session of the Dominion Parliament, the Nova Scotia Legislature threw its influence into the scale. On Monday a strongly worded bounty resolution, moved by the Premier and seconded by the leader of the Opposition was unanimously carried by that body, but it was without effect on the Dominion Government. It is generally thought that the failure to introduce such legislation means no more than the postponement of the matter until next year.

C. A. C. J.

Testing railroad materials by impact is increasing in favor, owing to the peculiar conditions existing in railroad service. Specifications recently adopted for steel rails include a drop test, which requires for rails of 85 lb. or more to the yard that a weight of 1 ton (net) shall fall 19 ft., striking the test rail between supports 3 ft. apart. For wheels and axles, similar drop tests have been in successful use for a number of years, that for cast iron wheels requiring a drop test of a 200-lb. weight falling 12 ft. for wheels of over 60,000 lb. capacity. Steel axles are tested by a weight of 1640 lb. falling 43 ft., for 40 and 50 ton axles, the centers of support being 3 ft. apart. Various drop tests are also made of draft gear and of friction buffers, but no such test specifications have been adopted.

## NEWS OF THE WORKS.

## Iron and Steel.

Julian Kennedy, Bessemer Building, Pittsburgh, is consulting engineer in the erection of the two blast furnaces being built by the Youngstown Sheet & Tube Company at Youngstown, Ohio. Mr. Kennedy has placed contracts for the steel plate work for these furnaces with the Variety Iron Works Company, Cleveland, Ohio, and the engines with the William Tod Company, Youngstown, Ohio. He has also placed a contract with the Rust Boiler Company, Pittsburgh, works at Midland, Pa., for 16 500-hp. water tube boilers, to be set up individually. This is one of the largest contracts for boilers placed in the Pittsburgh District for some time.

A recent statement in these columns concerning the New York State Steel Company's property at Buffalo, N. Y., referred to a tract of 27 acres fronting on Buffalo River. The company has 69 acres with frontage on the river. Since the first of the two Talbot furnaces was started on April 19 the company has been rolling each day's product into billets.

The Perry Iron Company, Erie, Pa., expects to have its new furnace in blast by the middle of June. The furnace is so located that ore can be unloaded directly into the stock yard, but for the present the building of a dock will not be undertaken and the company will take ore from the Pittsburgh & Erie Railroad dock, about a quarter of a mile away.

At a recent meeting of the stockholders of the Joliet Iron Products Company, Joliet, Ill., notice of whose organization was recently made in *The Iron Age*, the following officers were elected: J. J. Gaskill, president; Gus. Ancott, vice-president; C. E. Woodruff, secretary and general manager; James A. Hoover, auditor; D. H. Lentz, general superintendent.

The Standard Tube Company, Toledo, Ohio, has increased its capital stock from \$80,000 to \$150,000, and has purchased the plant and equipment of the Harris Toy Company, which will be operated to supply the increasing demand for the tube company's products. The manufacture of steel toys, such as were made by the Harris Toy Company, will also be continued.

Corrigan, McKinney & Co. of Cleveland will build an additional blast furnace at their plant in Josephine, Indiana County, Pa., and work is to be started at once. The new stack will be a duplicate of the present one and will be 20 x 85 ft., and have a daily capacity of about 400 tons.

The new furnace of the Bethlehem Steel Company, South Bethlehem, Pa., construction of which was started in December, 1905, was blown in April 23. The stack, which will be known as Furnace E, is 22 x 90 ft. and has a daily capacity of about 500 tons of iron.

The E. & G. Brooke Iron Company has resumed work at its sheet mill at Birdsboro, Pa., after extensive repairs.

The Valley Iron Works, near Coatesville, Pa., which was bought by Worth Bros. Company some time ago, has been put into operation after an idleness of 10 years.

The Pennsylvania Furnace Company, which was formed about seven years ago to operate the furnaces at Sheridan, Lebanon County, Pa., has decided to dissolve. As soon as the necessary proceedings are completed there will be over \$100,000 divided among the shareholders, the sum being proceeds of a sale of the plant some two or three years ago. The furnaces are now owned by the Berkshire Iron Works.

The blast furnace of the Rockdale Iron Company, Rockdale, Tenn., which went out for relining and repairs in the latter part of November, 1906, will be blown in about May 15.

The furnace of the Cleveland Furnace Company, Cleveland, Ohio, which was blown out for relining a month ago, is again in blast. The furnace company has just commenced the erection of dockage, about 1000 ft. in extent, along the river front adjacent to the furnace. When the dock is completed the company will erect an ore unloading plant at the furnace, moving to that site an ore plant that the company has been using at the Mahoning dock.

## General Machinery.

The Baird Machinery Company, Pittsburgh, whose second-hand department at 2513-2523 Liberty avenue in that city was recently destroyed by fire, has leased a building, 100 x 150 ft., on Twenty-third street, in which offices have been established. Its stock of second-hand machine tools is being added to right along, and in a short time the company will have a complete line. A machine shop for repairing machinery will be installed, this department being in charge of M. J. McMurphy.

The D. H. Stoll Company, Buffalo, N. Y., manufacturer of presses and dies for metal stamping, &c., has purchased a site adjoining its present plant, upon which it will erect an additional factory building.

The Buckeye Equipment Company has been organized at Marion, Ohio, with a capital stock of \$5000, to deal in machinery. L. J. Smith is president, W. W. Aronhalt vice-president, J. B. Smith treasurer and R. G. Lucas secretary.

J. L. Pilling, Chicago, Ill., has closed a 10-year contract with the Weir & Craig Mfg. Company, Chicago, for the manufacture

of his locomotive turntable tractors, transfer tables, combination winch and turntable tractors, depressed railroad water supply tanks, portable and stationary hoists, winches, cranes and drills, all of which Mr. Pilling will place on the market. The Chicago Pneumatic Tool Company has the general agency for the United States for the locomotive turntable tractors. On April 1 the Canadian business was transferred to the Canadian Pilling Company, whose headquarters are at 180 St. James street, Montreal. J. L. Pilling is president, John Taylor vice-president and Thomas Arnold manager and secretary-treasurer.

An increasing demand for car loaders, steel tipples, hoist and hauling engines and mining machinery equipment has made it necessary for the Ottumwa Box Car Loader Company, Ottumwa, Iowa, to enlarge its plant and put in additional machinery. This work is now in progress. Among recent orders received for box car loaders is one for the Lehigh Valley Coal Company, Wyoming, N. Y., designed to handle anthracite coal. On a test run a capacity of 150 tons of coal loaded per hour is said to have been developed.

The Elcher Company, Alliance, Ohio, has been reorganized, Matthew S. Early, the principal stockholder, having purchased the interest of A. L. Elcher. The company manufactures drop forgings.

The Crawford Locomotive & Car Works, Streator, Ill., is making additions to its plant, such as wheel shop, blacksmith shop, storeroom, extension to erecting shop and the installation of about \$30,000 worth of new machinery.

A deal has been closed at Chattanooga, Tenn., whereby Ross S. Faxon has sold his one-third interest in the Truxall-Painter Mfg. Company, manufacturer of hoisting machines, &c., to Z. C. Patten, Jr., and Geo. H. Patten. The latter previously owned a third interest in the company. Carl Painter, a member of the firm, retains his interest. Geo. H. Patten will hereafter be in charge of the plant. Extensive improvements will be made.

The A. W. Wykoff Company, Pittsburgh, has sold a 15-ton 50-ft. span Case crane to the Turner-Fricke Company, Sharon, Pa.; also a 15-ton 61-ft. span Case crane to the North American Steel Company, Bellington, W. Va.

The Pittsburgh Steel Construction Company, Lewis Building, Pittsburgh, has received a contract from the Tennessee Coal, Iron & Railroad Company, Birmingham, Ala., for the erection of a machine shop, 50 x 100 ft., with a 30-ft. lean-to on each side, and a blacksmith shop, 60 x 120 ft., with a 20-ft. lean-to.

## Power Plant Equipment.

H. W. Reisinger, Pittsburgh agent of the Harrisburg Foundry & Machine Works, has made the following recent sales of engines: The Zug Iron & Steel Company, 230 hp.; Crucible Steel Company of America, two 225 hp.; Consolidated Connellsville Coke Company, Uniontown, 285 hp.; Stone Gap Colliery Company, Norton, Va., 190 hp.; Shelby Steel Tube Company, Ellwood, 225 hp.; American Sheet & Tin Plate Company, New Philadelphia, Ohio, plant, 144 hp.; Ward-Mackey Company, Pittsburgh, two 190 hp.; Elkins Coal & Coke Company, Morgantown, W. Va., 450 hp.; Keeney's Creek Colliery Company, Winona, W. Va., 225 hp.; Virginia Iron, Coal & Coke Company, Bristol, Va., 300 hp., and Pittsburgh Brewing Company four 75 hp.

James E. McNary, Pittsburgh manager for the Hooven, Owens, Rentschler Company, Hamilton, Ohio, has sold two 24 x 44 x 48 in. tandem compound condensing engines to be installed in the new structural mills of the Carnegie Steel Company, Clairton, Pa.; also two 22 x 40 x 42 in. cross compound engines to the Lorain Steel Company, for driving the structural mills at Johnstown, Pa. Another contract taken lately calls for a cross compound engine, 22 x 42 x 42 in., for the Railway Steel Spring Company, Latrobe, Pa.

## Foundries.

The Searchlight Mfg. Company, Mt. Pleasant, Pa., has incorporated with a capital stock of \$125,000, \$100,000 of which is paid in, and has purchased the plant of the Simpson Stove & Mfg. Company of Pittsburgh, which was located in Canonsburg, Pa., and which it is dismantling and shipping the machinery to its own new buildings in Mt. Pleasant, located on the Baltimore & Ohio and Pennsylvania railroads. The company has also purchased the plant of the Keystone Stamping Company, Allegheny, Pa., which has been dismantled and the machinery installed in the Mt. Pleasant plant. The manufacture of the Simpson gas ranges and heating stoves will be conducted in connection with the company's own line of Searchlight gas and coal ranges. In addition a general foundry business will be carried on in the new plant, which has ample facilities.

The John F. Byers Machine Company, Ravenna, Ohio, has prepared plans and will soon begin the erection of a new foundry, pattern and blacksmith buildings. The structures will represent an outlay of from \$15,000 to \$20,000.

The Standard Car Wheel Company, Cleveland, Ohio, manufacturer of railroad and electric car wheels, has increased its capital stock from \$75,000 to \$150,000.

The Warren Foundry & Machine Company, Phillipsburg, N. J., is building an addition to one of its foundry buildings, 44 x 120 ft., with lean to 25 x 120 ft., of brick and steel. The new building will be used for the manufacture of cast iron



gas and water pipe, 12 in. and less in diameter. The equipment has been secured.

The Valley-Grey Iron Foundry Company, Saginaw, Mich., recently incorporated with a capital stock of \$20,000, is erecting a plant, the main building of which is to be 60 x 126 ft., and which will be equipped with modern machinery operated by electric power. The company has a large contract for machinery castings and expects to commence operations about July 1. The officers and directors are Alexander G. Finlay, president and general manager; John Luetjohn, vice-president; Peter J. Redmond, secretary; William P. Powell, treasurer, and E. C. Mershon.

The new plant of the Pocahontas Iron Works, Berkeley, Va., has been placed in operation. The plant, which is located on the Norfolk & Western Railroad, is 75 x 120 ft., and is equipped for manufacturing iron castings up to 6 tons in weight. In addition to the manufacture of castings the company will do structural and pattern work. M. A. Roach is president and secretary; Dr. J. P. Jackson, vice-president; A. J. Truitt, treasurer, and L. E. Miller, superintendent.

The Ellwood Malleable Company has been organized under the laws of Delaware, with a capital of \$250,000, and will erect two large brass foundries at Sharon, Pa. The incorporators are Frank C. Dambaugh, Henry J. Hendricks and W. J. McKean of Ellwood and Ira W. Logan of Rochester, Pa.

The plant of the Bloomsburg Foundry & Engineering Company, Bloomsburg, Pa., was sold at sheriff's sale last week to W. H. Von Mengerlinghausen, its former manager. It is probable that the plant will be placed in operation.

The foundry of the Texas Iron & Car Works, at Beaumont, Texas, of which M. W. Carroll is proprietor, is now in operation, the first heat having been taken a few days ago. The pattern department has been at work several weeks.

#### Bridges and Buildings.

The John Eichley, Jr., Company, Pittsburgh, builder of steel construction work of all kinds, is erecting a five-story steel and brick building, 96 x 120 ft., to serve as a warehouse. The building will contain about 400 tons of steel. Among the contracts for structural steel work being completed by the company are three office buildings in San Francisco and one office building in Montgomery, Ala., in which a total of about 2000 tons of steel will be used. It also received a contract some time ago for structural steel work on a new hospital in Allegheny, Pa., and has also been awarded a contract for the steel required in an annex to the building, the erection of which was decided upon recently. About 300 tons of steel will be used in the latter building.

H. E. Elrod and others of Houston, Texas, have organized a company with a capital stock of \$50,000 and have secured a site upon which they will erect a plant to include structural steel shop, forge shop, templet shop, warehouse and other buildings. The building will be of steel construction and work of erection will be started at an early date. They will be equipped with electric traveling cranes and modern motor driven machinery, all of which have been purchased.

The Republic Iron & Steel Company will soon commence work on the erection of a large office building on the site formerly occupied by the Enterprise Boiler Company at Youngstown, Ohio.

The Oklahoma City Structural Steel & Iron Works, which is a branch of a Kansas City firm, will erect in Oklahoma City a structural steel and iron plant as soon as a site can be selected. It has heretofore operated as a jobbing house.

#### Motors and Small Engines.

The Mechanical Appliance Company, Milwaukee, Wis., manufacturer of electric motors, has increased its capital stock from \$150,000 to \$200,000.

The E. R. Thomas Motor Company, Buffalo, N. Y., has drawn plans and will erect an additional four-story factory building adjoining its present plant on Niagara street and the New York Central Belt Line. It will be fireproof and cost \$40,000.

#### Fires.

The plant of the Zoeller Packing Company, Allegheny, Pa., was destroyed by fire April 24, the loss being about \$200,000.

The pulp mill of the Lake Superior Corporation, located in the Canada Soo, across the river from Sault Ste. Marie, was burned April 24, the loss being about \$75,000.

The building occupied by the H. M. Cook Belting Company, the A. L. Young Machinery Company and the Sullivan Machinery Company, San Francisco, Cal., was burned April 19, the loss being about \$20,000.

The plant of the Acme Road Machine Company, Frankfort, N. Y., was destroyed by fire April 26. The loss is placed at \$100,000.

The foundry of J. H. Newbury, Goshen, N. Y., was damaged \$25,000 by fire last week.

The pump station of the Buffalo Union Furnace Company at the foot of Hamburg street, Buffalo, was destroyed by fire last week, damaging machinery to the extent of \$5000.

The plant of the Tait & Sons Paper Company, Bridgeport, Conn., was burned April 29, the loss being about \$40,000.

The plant of the National Stove Company, Lorain, Ohio, was destroyed by fire April 30, the loss being about \$100,000.

#### Hardware.

Parry Mfg. Company, Indianapolis, Ind., manufacturer of buggies, &c., has awarded contracts for the erection of a large brick factory connecting two of the buildings now in use. The construction will be of brick, concrete and steel and the building will be the same style of architecture as the old ones.

What might have been a serious explosion recently occurred at the plant of the Penn Shovel Mfg. Company, Warren, Ohio, when a water heater attached to the main boilers exploded. Had the usual force been at work at the time the results might have been serious, but fortunately no one was badly hurt. The company under its new manager, Clay Hanna, is increasing its output, and with its new rolling mill in operation and with steel and handle supply provided for will soon be turning out from 275 to 300 dozen shovels a day. It is stated that there is already enough business booked to occupy the plant until the first of next year. The company has installed a metal sawing plant operated by a 75-hp. engine, which is used for cutting up wheel rims. The handle plant is also in full operation and turning out a large quota of handles daily.

The Inter-Mountain Safe & Lock Company, Salt Lake City, Utah, has recently been incorporated with a capital stock of \$10,000. The company will be distributors in the intermountain territory for the full line of the Herring-Hall-Marvin Safe Company's products, in addition to which it will carry a complete line of lower grade safes and locks. The officers of the company are Charles G. Field, president and manager; B. F. Redman, vice-president; Herbert Pembroke, secretary and treasurer.

A factory for the manufacture of ice cream freezers and hardware specialties will be started in Fredericktown, Ohio, by F. B. Zieg. The plant will consist of two buildings, one 50 x 160 ft. and the other 24 x 80 ft.

The Laminé Metal Company, Cleveland, Ohio, has been incorporated with a capital of \$20,000 to manufacture metal goods. The incorporators are George A. Gaston, Robert J. Good, M. L. Thomsen, V. E. Davis and R. M. Torrance.

The Economy Cooler Company has been incorporated at Buffalo, N. Y., and will establish a factory at 757 Michigan street for the manufacture of water coolers, beer coolers, &c., of galvanized iron and copper. John G. Marchand is president.

The Automatic Chain Company has been incorporated at Buffalo, N. Y., with a capital stock of \$300,000, to manufacture chain by special automatic machinery. Among the directors are Elgood C. Lufkin of the Snow Steam Pump Works, Charles R. Huntley and Daniel T. Nash of the Buffalo General Electric Company, and De Lancey Rankin and Elwood Grissinger of the Cataract Power & Conduit Company.

The Curtis Screw Company, Buffalo, N. Y., has purchased the three-story factory building on Gull street and the New York Central Belt Line formerly occupied by the Graphic Arts Company and will equip it for its own occupancy.

The Metal Goods Mfg. Company, Painesville, Ohio, has been incorporated by Max E. Miesel, R. Hitchcock, E. C. Mullen, D. E. Morgan and Fred F. Truhlar, to manufacture metal bindings and hardware specialties.

The U. S. Hame Company, Buffalo, N. Y., has just completed a new brass foundry, and is now engaged in building an addition to the plant which will cost about \$25,000.

The Pittsburgh Screw & Bolt Company, Pittsburgh, is adding a three-story brick and steel structure 100 x 100 ft., to its plant. The new building will be equipped with machinery for the manufacture of nuts, bolts, washers, screws and rivets, and will also contain the general offices of the company. It will be completed in July or August.

The Hathaway Mfg. Company, Bridgeport, Conn., manufacturer of metal garter trimmings, buckles, &c., is to extend its works by the erection of a one-story addition 51 x 64 ft.

A controlling interest in the stock of the Bridgeport Wire Goods Company, Bridgeport, Conn., has been acquired by Thomas F. Cooney, Bridgeport, and George S. Snow, Yonkers, N. Y. The capital stock has been increased and manufacturing facilities extended, and the plant has been removed to larger quarters in the building formerly occupied by the Ives Mfg. Company. George S. Snow is president and Thomas F. Cooney secretary and treasurer.

The James Flynn Iron Works Company, Cambridge, Mass., has been incorporated in Massachusetts to take over the business of the James Flynn Architectural Iron Works Company. James Flynn is president, M. G. Bradfield treasurer and M. J. Donovan clerk. New capital has been put into the business. The company manufactures folding fire escape ladders and various other lines of iron work.



## Miscellaneous.

Owing to the large demand for its heaters the Homestead Heater & Mfg. Company, Homestead, Pa., is adding more equipment, which will considerably increase its output. The company will soon place on the market a larger size of heater, designed for having storage tank of 100 to 120 gal. capacity. This heater will be known as its No. 3 and will be of the same type and construction as its present heaters.

The J. G. Brill Company, Philadelphia, Pa., has placed contract for the erection of a new truck shop, 110 x 240 ft.

The Youngstown Car Mfg. Company, Youngstown, Ohio, is contemplating making some large additions to its plant, which will considerably increase its capacity for the manufacture of cars. The exact nature of these extensions has not as yet been determined.

It is stated that the American Snuff Company, New York, is to build a factory at Nashville, Tenn., for the manufacture of snuff cans.

The Southern Stove Works, Richmond, Va., is building additions to its plant which will double its daily output of 300 stoves. The additions include the erection of a fireproof warehouse, 90 x 200 ft., of brick and steel, and a four-story brick manufacturing building, 66 x 90 ft., adjoining the present mounting room, which will make that building 66 x 240 ft., four stories high. The company's foundry building is 86 x 400 ft. The enlargement of the plant is made necessary by the increase in demand for the company's line of Tiptop stoves and ranges, and will call for the expenditure of about \$30,000.

The Monarch Valve & Mfg. Company, Warren, Mass., has begun the manufacture of bronze and iron gate and globe valves, in the shop formerly occupied as the Torkeison gun factory. There has been a change in management since the original formation of the company some months ago, Frederick L. Lane having retired as general manager and superintendent. Charles J. Roadstrand is the president, Henry E. Jodoin secretary and Stuart M. Robson treasurer. The company is already delivering the full line of standard valves of 125 lb. capacity, and expects shortly to be able to supply the trade with the line of 250 lb. capacity.

The Milwaukee Mica Company, of which N. A. Christensen, the air brake manufacturer, is the principal owner, will soon begin the development of a new industry for Milwaukee. The company controls one of the largest mica deposits in the United States, and has acquired a two-story brick building on the South Side, where it will manufacture mica for use in connection with electrical apparatus.

The J. I. Case Threshing Machine Company, Racine, Wis., is planning to increase its capital stock from \$2,000,000 to a much larger amount, with a probable view to extending its export business. A meeting of the stockholders has been called, to be held May 1 at Racine.

B. J. Mullin, Leetonia, Ohio, patentee of the Mullin blast furnace gas washer, and which was recently illustrated in *The Iron Age*, has furnished one of these gas washers to each of the following companies: The Cherry Valley Iron Company, Leetonia, Ohio; Kittanning Iron & Steel Mfg. Company, Kittanning, Pa.; Perry Iron Company, Erie, Pa.; Inland Steel Company, Chicago, Ill.; National Tube Company, Lorain, Ohio; Republic Iron & Steel Company, New Castle, Pa. Mr. Mullin has also received an order for three gas washers which are now being installed at the blast furnace plant of the American Steel & Wire Company, Cleveland, Ohio.

The Star Enameling & Stamping Company, McKees Rocks, Pittsburgh, has installed two more annealing furnaces and two toggle presses. The company is adding some new goods to its line of stamped and enameled ware, and is operating its plant night and day.

The Youngstown Furnace & Supply Company, Youngstown, Ohio, manufacturer of the Lion combination heating furnace, has recently increased its capital from \$50,000 to \$100,000. F. J. Grier is now connected with the sales department of the company.

The Acme Motor Car Company, which was chartered in Pennsylvania recently, has taken over the Elm street works, in Reading, Pa. H. M. Sternbergh of the American Iron & Steel Mfg. Company is president.

The business of A. H. Wells, Waterbury, Conn., manufacturer of seamless brass, copper, bronze and silver tubing, &c., has been incorporated as A. H. Wells & Co., with capital stock of \$50,000. The incorporators are Ambrose H. Wells and his five sons, Samuel J. Wells, F. A. Wells, G. H. Wells, C. H. Wells and Edward A. Wells. The business was formerly owned exclusively by Ambrose H. Wells, and now his sons are taken into the business as owners. There will be no change in management.

**Bridge Building with Electric Power.**—In the construction of the King Edward Bridge, on the Northeastern Railway, at Newcastle-on-Tyne, England, electric

power was used throughout. The bridge consists of four spans, and contains a total of 5873 tons of steel. The generating station for the bridge was equipped with two direct connected generators each delivering 750 amperes at 440 volts, and three smaller sets were used for supplying lights. Steam was obtained from locomotive boilers. The derricks, conveyor system and air compressors were all driven by electricity. The distributing system was divided into two parts, one for the caisson work and the other for the outside apparatus. Each caisson was provided with three shafts, and was served by a 5-ton electric derrick. The air lock doors, which were heavy, were operated by small electric motors. Each of the three compressors was driven by a 125-hp. shunt-wound motor at 90 rev. per min. The compressor cylinders measured 15 in. in diameter by 36 in. stroke. A cableway, with a span of 1520 ft. was stretched across the river for delivering materials. It was designed to handle loads of 10 tons, and was served by a 100-hp. motor. A 15-ton gantry crane was used for constructing the spans. It was fitted with shunt motors.

## United States Steel Corporation's Earnings.

The statement of the United States Steel Corporation's earnings for the quarter ending March 31, 1907, makes the following showing, as compared with the corresponding period of 1906:

	1907.	1906.
January .....	\$12,838,703	\$11,856,375
February .....	12,145,815	10,958,275
March .....	14,137,974	13,819,840
Total after deducting all expenses incident to operations, including those for ordinary repairs and maintenance of plants, employees' bonus funds, and interest on bonds and fixed charges of the subsidiary companies.....	\$39,122,492	\$36,634,490
Less charges and appropriations for the following purposes:		
Sinking funds on bonds of subsidiary companies.....	\$288,607	.....
Depreciation and reserve funds (regular provisions).....	3,865,914	.....
Special improvement and replacement funds .....	1,000,000	.....
	\$5,154,521	7,325,608
Net earnings.....	\$33,967,971	\$29,308,882
Deduct interest for the quarter on U. S. Steel Corporation bonds outstanding .....	5,685,615	5,741,671
Sinking funds for the quarter on U. S. Steel Corporation bonds—viz.:		
Installments .....	1,012,500	.....
Interest on bonds in sinking funds..	238,848	.....
	\$1,251,348	1,195,292
	\$6,936,963	\$6,936,963
Balance.....	\$27,031,008	\$22,371,919
Dividends for the quarter:		
Preferred, 1¼ per cent.....	\$6,304,919	6,304,919
Common, ½ per cent.....	2,541,513	.....
Surplus for the quarter.....	\$18,184,576	\$16,067,000
Less appropriated from surplus on account of expenditures made and to be made on authorized appropriations for additional property, construction and discharge of capital obligations .....	14,500,000	10,500,000
Balance of surplus for the quarter	\$3,684,576	\$5,567,000
Unfilled orders on hand March 31, 1907.....	8,043,858 tons.	

As the earnings for the last quarter of 1906 were \$41,744,964, the first quarter of 1907 shows a falling off of \$2,622,472, which may to a large extent be accounted for by the serious floods which for a considerable time interfered with the operations of plants in and near Pittsburgh.

The special appropriation from surplus is again large, amounting to \$14,500,000. The previous quarter's appropriation on this account was \$15,500,000.

The unfilled orders on hand at the end of the quarter amounted to 8,043,858 tons, as compared with 8,489,718 tons December 31, 1906; 7,936,884 tons September 30, 1906, and 7,018,712 tons March 31, 1906.

## The Iron and Metal Trades.

There has been increased activity in Foundry Iron in nearly all sections of the country covering all deliveries, and the market is distinctly firmer. Some of the leading Southern companies report having sold considerable quantities for second half delivery, without entering into details. They report that they are sold up for the balance of the year and have withdrawn quotations.

In the Central West the market in Steel making Irons is practically bare for the whole of the year, with evidences that the demand is not yet completely satisfied.

In the East the situation is somewhat different. There have been some fair sales of Basic Iron for second half delivery on the basis of \$23 to \$23.25, delivered, and up to \$24 for prompt delivery. The Chinese Basic has all been placed, a part of it going to a Canadian Steel plant. But the majority of buyers are holding off on the ground that the volume of orders and the prices for Steel Billets and Finished Material do not permit them to pay current prices, and they aver that they will take their chances from month to month, until the situation is clearer. One important factor is the announcement that after July 1 the Pencoyd plant of the Steel Corporation, which uses about 12,000 tons of Basic Pig Iron a month, will be supplied from the Neville Island plant in the Pittsburgh District, so that the Eastern Basic furnaces lose that outlet. As against that there has been placed some tonnage of Steel Billets for prompt delivery with Eastern Steel works to go to the Pittsburgh District.

It is estimated that the total tonnage of Structural Material placed during April has aggregated about 115,000 tons and that now 100,000 tons is pending. Among the contracts closed are 8500 tons for new buildings for the Carnegie Steel Company, 5600 tons for two buildings in Chicago, 1800 tons for a building in Philadelphia and 2000 tons for three structures in San Francisco.

Foreign Pig Iron markets have advanced almost continuously, Middlesbrough reaching 58s. 6d. This is attributed chiefly to buying in England for Germany, where the suspense over the renewal of the Stahlverband is over and a rush of business held back pending developments is expected.

While some orders for Steel Rails for delivery during 1908 have been booked, the details are still missing. The most important transaction this week is the sale of 46,000 tons to the Savannah, Augusta & Northern, partly for this year's and partly for next year's delivery. In Chicago an order for 12,000 tons of Traction Rails has been secured. There is some inquiry from Mexico, the Antilles and South America.

Pipe makers have secured the material for a 20-mile line of 16-in. Pipe and a 17-mile line of 10-in. Pipe, the pressure upon the mills being exceedingly heavy. A leading interest has purchased a pretty large tonnage of Iron Skelp at 2.25c. to 2.27½c. per pound, Pittsburgh.

Wire products are moving at an unprecedented rate, the Bar mills are very busy, large orders are coming to the Tin Plate mills for second half delivery and some of the Sheet mills are asking premiums for early delivery.

The Cotton Tie season was opened last week, the price being fixed at 95c. per bundle. It is stated that orders aggregating 700,000 bundles have been placed thus far.

## A Comparison of Prices.

Advances Over the Previous Month in Heavy Type,  
Declines in Italics.

At date, one week, one month and one year previous.

	May 1, 1907.	Apr. 24, 1907.	Apr. 3, 1907.	May 2, 1906.
<b>PIG IRON, Per Gross ton:</b>				
Foundry No. 2, Standard, Philadelphia .....	\$24.50	\$24.50	\$24.50	\$18.50
Foundry No. 2, Southern, Cincinnati .....	24.25	24.75	26.00	16.75
Foundry No. 2, Local, Chicago ..	<b>26.50</b>	26.00	26.00	18.75
Bessemer, Pittsburgh .....	<b>23.85</b>	23.85	22.85	18.10
Gray Forge, Pittsburgh .....	<b>21.85</b>	21.85	21.60	16.60
Lake Superior Charcoal, Chicago ..	<b>27.00</b>	26.50	26.50	19.25
<b>BILLETS, &amp;c., Per Gross Ton:</b>				
Bessemer Billets, Pittsburgh .....	<b>30.50</b>	30.50	30.00	27.00
Forging Billets, Pittsburgh .....	30.00	36.00	36.00	32.00
Open Hearth Billets, Phila. ....	<b>32.50</b>	32.00	31.50	29.00
Wire Rods, Pittsburgh .....	37.00	37.00	37.00	34.50
Steel Rails, Heavy, Eastern Mill ..	28.00	28.00	28.00	28.00
<b>OLD MATERIAL, Per Gross ton:</b>				
Steel Rails, Melting, Chicago .....	18.00	18.00	18.00	14.00
Steel Rails, Melting, Phila. ....	<b>19.25</b>	19.00	19.00	17.25
Iron Rails, Chicago .....	24.50	24.50	25.00	21.25
Iron Rails, Philadelphia .....	<b>27.25</b>	27.00	27.00	21.50
Car Wheels, Chicago .....	25.00	25.00	25.00	19.00
Car Wheels, Philadelphia .....	24.00	24.00	24.00	16.75
Heavy Steel Scrap, Pittsburgh ..	18.00	17.75	18.00	15.00
Heavy Steel Scrap, Chicago .....	<i>15.50</i>	15.50	16.00	13.50
Heavy Steel Scrap, Philadelphia ..	18.75	18.75	18.75	17.00

### FINISHED IRON AND STEEL,

Per Pound:	Cents.	Cents.	Cents.	Cents.
Refined Iron Bars, Philadelphia ..	1.83½	1.83½	1.93½	1.63½
Common Iron Bars, Chicago .....	1.76½	1.76½	1.81½	1.66½
Common Iron Bars, Pittsburgh ..	1.80	1.80	1.80	1.50
Steel Bars, Tidewater, New York ..	1.74½	1.74½	1.74½	1.64½
Steel Bars, Pittsburgh .....	1.60	1.60	1.60	1.50
Tank Plates, Tidewater, New York ..	1.84½	1.84½	1.84½	1.74½
Tank Plates, Pittsburgh .....	1.70	1.70	1.70	1.60
Beams, Tidewater, New York .....	1.84½	1.84½	1.84½	1.84½
Beams, Pittsburgh .....	1.70	1.70	1.70	1.70
Angles, Tidewater, New York .....	1.84½	1.84½	1.84½	1.84½
Angles, Pittsburgh .....	1.70	1.70	1.70	1.70
Skelp, Grooved Steel, Pittsburgh ..	1.85	1.85	1.90	1.57½
Skelp, Sheared Steel, Pittsburgh ..	1.90	1.90	2.00	1.60

### SHEETS, NAILS AND WIRE,

Per Pound:	Cents.	Cents.	Cents.	Cents.
Sheets, No. 27, Pittsburgh .....	2.50	2.50	2.50	2.25
Wire Nails, Pittsburgh .....	2.00	2.00	2.00	1.85
Cut Nails, Pittsburgh .....	2.05	2.05	2.05	1.80
Barb Wire, Galv., Pittsburgh .....	2.45	2.45	2.45	2.30

### METALS, Per Pound:

	Cents.	Cents.	Cents.	Cents.
Lake Copper, New York .....	<b>25.00</b>	25.00	24.50	18.62½
Spelter, New York .....	6.60	6.75	6.85	6.05
Spelter, St. Louis .....	6.45	6.60	6.65	5.95
Lead, New York .....	6.10	6.10	6.25	5.60
Lead, St. Louis .....	5.92½	5.95	6.05	5.60
Tin, New York .....	<b>43.05</b>	42.00	40.00	40.00
Antimony, Hallett, New York .....	21.00	22.00	23.00	22.00
Nickel, New York .....	45.00	45.00	45.00	40.00
Tin Plate, 100 lb., New York .....	\$4.09	\$4.09	\$4.09	\$3.79

## Chicago.

FISHER BUILDING, May 1, 1907.—(By Telegraph.)

Interest in market activities has for the past week been chiefly centered in the vigorous buying movement that has developed in Pig Iron for forward deliveries. From the large number of sales made it would appear that consuming interests are reluctantly accepting the view that lower prices will not be available for last half requirements. While no lots of exceptional size were included in the sales made in this market, the total tonnage placed was important. The claims heretofore made by furnace interests that their schedules included only a limited amount of unbooked tonnage available for last half engagements find support in the announcement made by the Republic and Tennessee companies that they can accept no further bookings for that period. Other important interests are making no sales against the products of a number of furnaces for the third quarter. From any point of view, the situation is at present one of commanding strength for sellers, and higher prices are the result. The demand for finished products is well sustained, and prices in all lines are firmly maintained. Besides inquiries now in the market for a considerable tonnage of Traction Rails, an order for 12,000 tons was recently placed. Deliveries on Plates, Sheets and Pipe are not much improved and warehouse stocks are freely resorted to for immediate requirements.

**Pig Iron.**—After a prolonged period of inactivity, during which buyers and sellers have been held apart by differing views as to prices on last half requirements, the Pig Iron market was last week enlivened by a buying movement that



exceeded in proportions anything seen since the early part of the year. Orders for lots ranging from 150 to 2000 tons, covering third and fourth quarter deliveries, were plentiful, and the aggregate of the tonnage sold was very large. While perhaps the greater part of the tonnage sold was booked at \$18.50, Birmingham, numerous sales were also made at prices ranging all the way up to \$20. Naturally the disposition thus shown by consumers to take hold at prices asked has greatly strengthened the position of sellers, which is further fortified by the relatively small amount of last half tonnage that remains unplaced. As a result of the recent buying prices have been advanced, and while there is a lack of uniformity in quotations, nothing better than \$19, Birmingham, for No. 2 Foundry is being named in this market for the full last half, while for separate quarters \$20 is asked for the third and \$19 for the fourth. The Republic and Tennessee companies have closed their books for last half tonnage and withdrawn quotations. The Sloss-Sheffield has no Sloss grades to offer for the third quarter, and the schedules of two of its other furnaces are completed for the same period. Strictly spot Iron is firmly held at \$23 and for June shipment \$22 to \$22.50 is quoted, but the demand for any nearby delivery is light, owing to the well supplied condition of foundry stocks. In the following quotations the inside figures represent the general range of prices for the latter part of the second quarter, while the outside prices are for spot or early May delivery, f.o.b. Chicago:

Lake Superior Charcoal.....	\$27.00 to \$28.00
Northern Coke Foundry, No. 1.....	27.00 to 28.00
Northern Coke Foundry, No. 2.....	26.50 to 27.50
Northern Coke Foundry, No. 3.....	26.00 to 27.00
Northern Scotch, No. 1.....	26.50 to 27.50
Ohio Strong Softeners, No. 1.....	26.50 to 27.50
Ohio Strong Softeners, No. 2.....	26.00 to 27.00
Southern Coke, No. 1.....	26.85 to 27.85
Southern Coke, No. 2.....	26.35 to 27.35
Southern Coke, No. 3.....	25.85 to 26.85
Southern Coke, No. 4.....	25.35 to 26.35
Southern Coke, No. 1 Soft.....	26.85 to 27.85
Southern Coke, No. 2 Soft.....	26.35 to 27.35
Southern Gray Forge.....	22.35 to 23.35
Southern Mottled.....	22.35 to 23.35
Malleable Bessemer.....	27.00 to 27.50
Standard Bessemer.....	25.85 to 26.35
Jackson Co. and Kentucky Silvery, 6 %	31.30 to 31.80
Jackson Co. and Kentucky Silvery, 8 %	33.30 to 33.80
Jackson Co. and Kentucky Silvery, 10 %	35.30 to 35.80

(By Mail.)

**Billets and Rods.**—Owing to the existing scarcity of Rods there is but little movement, transactions being mainly confined to scattering lots of small tonnage, on which prices range from \$37 to \$38, Pittsburgh, for prompt shipment. Inquiry for Forging Billets is light. Sales of a few small lots are reported at \$38, Chicago, which price continues to rule for Standard sizes on current orders.

**Rails and Track Supplies.**—While an important tonnage of Steel Rail specifications has been entered this week, there are no new contracts for 1908 delivery reported. One order for 12,000 tons of Traction Rails is noted, and there are inquiries in the market from two other sources aggregating 5100 tons. We quote as follows: Angle Bars, accompanying Rail orders, 1907 delivery, 1.65c.; car lots, 1.90c. to 1.95c.; Spikes, 2.35c. to 2.45c., according to delivery; Track Bolts, 2.65c. to 2.75c., base, Square Nuts, and 2.80c. to 2.90c., base, Hexagon Nuts. The store prices on Track Supplies range from 0.15c. to 0.20c. above mill prices. Light Rails, 30 to 45 lb. sections, \$35; 25-lb., \$36; 20-lb., \$37; 16-lb., \$38; 12-lb., \$39, f.o.b. mill. Standard Sections \$28, f.o.b. mill, full freight to destination.

**Structural Material.**—The demand holds up well, both as to specifications and new business. A large amount of tonnage involved in prospective structures is coming forward without undue delay, and there seems to be no hesitation in the closure of contracts. The Brown-Ketcham Iron Works secured the contract for the Corn Exchange Bank, 4500 tons; while the Telephone Building, 1100 tons, was taken by the Hansell-Elcock Company. The contract for 3000 tons for a new theater building at Milwaukee will be let next week. Prices from store are quoted without change at 2.05c. to 2.10c., and mill prices are as follows: Beams and Channels, 3 to 15 in., inclusive, 1.86½c.; Angles, 3 to 6 in., ¼-in. and heavier, 1.86½c.; larger than 6 in. on one or both legs, 1.96½c.; Beams, larger than 15 in., 1.96½c.; Zees, 3 in. and over, 1.86½c.; Tees, 3 in. and over, 1.91½c., in addition to the usual extras for cutting to extra lengths, punching, coping, bending and other shop work.

**Plates.**—Slow deliveries, running forward into months, from the leading sources of supply is a condition that from week to week shows little change. Premiums on prompt deliveries are easily obtained by mills in position to furnish them. On account of the sustained demand jobbers are finding difficulty in keeping stocks replenished. We quote for future deliveries as follows: Tank Plate, ¼-in. and heavier, wider than 6¼ in. and up to 100 in. wide, inclusive, car lots, Chicago, 1.86½c. to 2.06½c.; 3-16 in., 1.96½c. to 2.16½c.; Nos. 7 and 8 gauge, 2.01½c. to 2.21½c.; No. 9, 2.11½c. to 2.31½c.; Flange quality, in widths up to 100 in., 1.96½c. to 2.06½c., base, for ¼-in. and heavier, with the same advance for lighter weights; Sketch Plates, Tank

quality, 1.96½c. to 2.16½c.; Flange quality, 2.06½c. Store prices on Plates are as follows: Tank Plate, ¼-in. and heavier, up to 72 in. wide, 2.20c. to 2.30c.; from 72 to 96 in. wide, 2.30c. to 2.40c.; 3-16 in., up to 60 in. wide, 2.30c. to 2.40c.; 72 in. wide, 2.50c. to 2.65c.; No. 8, up to 60 in. wide, 2.35c. to 2.45c.; Flange and Head quality, 0.25c. extra.

**Sheets.**—The volume of new business offered is still large and the clearance of mill order books proceeds very slowly. In fact not much betterment in deliveries is noticed in any direction. Notwithstanding the recent advance of from \$2 to \$5 a ton on Black Sheets from store, the demand is undiminished. We quote mill shipments as follows: Blue Annealed, No. 10, 2.01½c.; No. 12, 2.06½c.; No. 14, 2.11½c.; No. 16, 2.21½c.; Box Annealed, Nos. 17 to 21, 2.51½c.; Nos. 22 to 24, 2.56½c.; Nos. 25 and 26, 2.61½c.; No. 27, 2.66½c.; No. 28, 2.76½c.; No. 29, 2.86½c.; No. 30, 2.96½c.; Galvanized Sheets, Nos. 10 to 14, 2.81½c.; Nos. 15 and 16, 3.01½c.; Nos. 17 to 21, 3.16½c.; Nos. 22 to 24, 3.31½c.; Nos. 25 and 26, 3.51½c.; No. 27, 3.71½c.; No. 28, 3.91½c.; No. 30, 4.41½c.; Sheets from store: Blue Annealed, No. 10, 2.50c.; No. 12, 2.55c.; No. 14, 2.60c.; No. 16, 2.70c.; Box Annealed, Nos. 18 to 21, 2.80c.; Nos. 22 to 24, 2.85c.; No. 26, 2.90c.; No. 27, 2.95c.; No. 28, 3.05c.; No. 30, 3.45c.; Galvanized from store: Nos. 10 to 20, 3.30c. to 3.35c.; Nos. 22 to 24, 3.55c. to 3.60c.; No. 26, 3.65c. to 3.70c.; No. 27, 3.85c. to 3.95c.; No. 28, 4.15c.; No. 30, 4.65c. to 4.70c.

**Bars.**—The active interest shown in Steel Bars is evident from the large number of orders placed and the inquiries received during the past week. While the business booked includes no individual tonnages of special importance, it indicates a notable degree of activity in Steel using plants. Contracting for year forward requirements is of a desultory character and but few consumers have thus covered their wants. Quotations are as follows: Steel Bars, 1.76½c., with half extras; Iron Bars, 1.76½c. to 1.81½c.; Hoops, 2.16½c., extras as per Hoop card; Bands, 1.76½c., as per Bar card, half extras; Soft Steel Angles and Shapes, 1.86½c., half extras. Store prices are as follows: Bar Iron, 2.10c. to 2.25c.; Steel Bars, 2c. to 2.10c.; Steel Bands, 2c., as per Bar card, half extras; Soft Steel Hoops, 2.35c. to 2.45c., full extras.

**Merchant Pipe.**—The question of first importance among consumers of Merchant Pipe is not one of price, but of supply. The demand is unremitting and the supply scarce. The National Tube Company will not resume quotations until June 1 at least, and it is reported that several of the independent mills have withdrawn quotations. There are under the circumstances, therefore, no definite prices; those named are only nominal, and for reasonably prompt delivery higher prices are asked, the advance being determined by the conditions involved in the individual case presented. Mill prices are approximately as follows: Black Steel Pipe, ¾ to 5 in., 72.35; Galvanized, 62.35, carload lots, Chicago. From store in small lots, Chicago jobbers quote 70 per cent. on Black Steel Pipe, ¾ to 6 in. About 4 points advance above these prices is asked for Iron Pipe.

**Boiler Tubes.**—The demand for Merchant Tubes has not slackened perceptibly, and mill deliveries are not appreciably improved. Mill quotations for future delivery on the base sizes are as follows: 2¾ to 5 in., in carload lots, Steel Tubes, 63.35; Iron, 50.35; Seamless, 49.35; 2½ in. and smaller, and lengths over 18 ft., and 2½ in. and larger, and lengths over 22 ft., 10 per cent. extra. Store prices are as follows:

	Steel.	Iron.	Seamless.
1 to 1½ in.....	35	35	35
1½ to 2¼ in.....	50	35	35
2½ in.....	52½	35	35
2¾ to 5 in.....	60	47½	47½
6 in. and larger.....	50	35	..

**Merchant Steel.**—The run of orders for current needs is of the usual character, and the demand for Smooth Machinery Steel and special shapes is good. Here and there forward delivery contracts are being placed, but business of this kind is being pressed by neither mill nor buyers. Quotations are as follows: Planished or Smooth Finished Tire Steel, 1.96½c.; Iron Finish, up to 1½ x ½ in., 1.91½c.; Iron Finish, 1½ x ½ in. and larger, 1.76½c., base; Channels for solid rubber Tires, ¾ to 1 in., 2.26½c., and 1½-in. and larger, 2.16½c.; Smooth Finished Machinery Steel, 2.16½c.; Flat Sleigh Shoe, 1.91½c.; Concave and Convex Sleigh Shoe, 2.06½c.; Cutter Shoe, 2.45c.; Toe Calk Steel, 2.31½c.; Railroad Spring, 1.96½c.; Crucible Tool Steel, 6½c. to 8c. and still higher prices are asked on special grades. Shafting, 50 per cent. off in car lots and 45 per cent. in less than car lots, base territory.

**Cast Iron Pipe.**—No new heavy tonnage requirements are reported, though orders for small lots are numerous and constitute a very satisfactory business. The demand for 4-in. Pipe is rapidly diminishing, the tendency being steadily toward the use of larger sizes. In the larger systems nothing smaller than 6 in. is now commonly used, and in many instances 8 in. is made the minimum size. Of the notable tonnage lots let last week, 2100 tons placed by the Cincinnati Board of Public Service and 800 tons by the Denver Gas Company were taken by the United States Cast Iron



Pipe & Foundry Company. Among other small lots booked were the lettings of Arlington Heights, Ill., 400 tons; Belingham, Wash., 150 tons; Kalamazoo, Mich., 300 tons, and 150 tons for an Eastern railroad. We quote per net ton as follows: Water Pipe, 4 in., \$38 to \$39; 6 to 12 in., \$37 to \$38; 16-in. and up, \$36 to \$37, with \$1 extra for Gas Pipe.

**Coke.**—The demand, while not by any means pressing, is fair, and contracting for forward deliveries is becoming more general among the foundries. Prices are reasonably firm at \$3.25 to \$3.50 per car lot at ovens, prompt delivery, for 72-hr. Connellsville Coke; Solvay Coke is quoted at \$6.75, Chicago, for prompt and \$6.50 for forward delivery.

**Old Material.**—Although there is somewhat less demand for Cast Scrap, and prices have receded slightly from the high mark of several weeks past, the market is still strong and prices are well maintained at the present level. Locally the rolling mills are buying intermittently upon favorable offers, and the business moving is of sufficient volume to sustain prices for the present at least. Very little change in quotations is observed throughout the entire list. The railroad offerings are very light this week, comprising 2100 tons by the Chicago, Milwaukee & St. Paul, and about 100 tons by the Pere Marquette. The following quotations are per gross ton, f.o.b. Chicago:

Old Iron Rails.....	\$24.50 to \$25.00
Old Steel Rails, 3 ft. and over.....	18.50 to 19.00
Old Steel Rails, less than 3 ft.....	18.00 to 18.50
Relaying Rails, standard sections, subject to inspection.....	31.00 to 32.00
Old Car Wheels.....	25.00 to 25.50
Heavy Melting Steel Scrap.....	15.50 to 16.00
Frogs, Switches and Guards.....	16.50 to 17.00
Mixed Steel.....	12.50 to 13.00

The following quotations are per net ton:

Iron Fish Plates.....	\$19.50 to \$20.50
Iron Car Axles.....	26.50 to 27.00
Steel Car Axles.....	21.00 to 21.50
No. 1 Railroad Wrought.....	15.25 to 15.75
No. 2 Railroad Wrought.....	14.25 to 14.75
Railway Springs.....	15.00 to 15.50
Locomotive Tires, smooth.....	17.00 to 17.50
No. 1 Dealers' Forge.....	12.50 to 13.00
Mixed Rustling.....	11.00 to 11.50
Iron Axle Turnings.....	11.50 to 12.00
Soft Steel Axle Turnings.....	11.50 to 12.00
Machine Shop Turnings.....	11.50 to 12.00
Cast Borings.....	9.50 to 10.00
Mixed Borings, &c.....	9.50 to 10.00
No. 1 Mill.....	10.00 to 10.50
No. 2 Mill.....	9.00 to 9.50
No. 1 Bolters, cut to Sheets and Rings.....	11.50 to 12.00
No. 1 Cast Scrap.....	18.50 to 19.00
Stove Plate and Light Cast Scrap.....	15.00 to 15.50
Railroad Malleable.....	16.50 to 17.00
Agricultural Malleable.....	15.50 to 16.00

**Metals.**—Users of Copper are buying sparingly for immediate requirements, but the demand seems to suffer no appreciable diminution despite the reported curtailment of operations by large users of this metal. Prices locally are held without change, save for slight fluctuation in some metals of minor importance. We quote as follows: Casting Copper, 25½c. to 26c.; Lake, 26c. to 26½c., in car lots for prompt shipment; small lots, ¼c. to ¾c. higher; Pig Tin, car lots, 45c.; small lots, 45½c.; Lead, Desilverized, 6.50c. to 6.60c., for 50-ton lots; Corroding, 7.25c. to 7.35c., for 50-ton lots; on car lots, 2¼c. per 100 lb. higher; Spelter, 7.15c.; Cookson's Antimony, 28½c., and other grades, 26½c. to 27½c.; Sheet Zinc is \$8.60 list, f.o.b. La Salle, in car lots of 600-lb. casks. On Old Metals we quote: Copper Wire, 20½c.; Heavy Copper Wire, 20c.; Copper Bottoms, 20c.; Copper Clips, 19½c.; Red Brass, 19c.; Red Brass Borings, 17½c.; Yellow Brass, 17c.; Yellow Brass Borings, 15½c.; Light Brass, 13c.; Lead Pipe, 5¼c.; Tea Lead, 5¼c.; Zinc, 5¼c.; Pewter, No. 1, 28c.; Tin Foil, 33c.; Block Tin Pipe, 30½c.

The Cal Hirsch & Sons Iron & Rail Company has removed its Chicago office from the Railway Exchange to Rooms 658, 659 and 660 First National Bank Building.

The Iowa State College engineering experiment station has been testing a producer gas equipment installed in the city electric light plant at Algona, Iowa, and very satisfactory results are reported. The producer is of the suction type, using anthracite pea coal. The gas engine is a three-cylinder vertical unit manufactured by Fairbanks, Morse & Co. It is rated at 150 hp., and is operated at 250 rev. per min. With a brake load of 40.1 hp. the fuel consumption per horse power hour figured out at 1.511 lb. When the load was increased to 82.7 hp. the consumption fell to 1.157 lb. per unit. With a slight overload, the brake horse power being 156.9, the fuel consumption was 0.999 lb. per hour per horse power. The fuel used in the test was bought at \$6 per ton. This would make the fuel cost of 1 hp. hour, when the engine is developing full power, about 3-10 cent.

## Philadelphia.

PHILADELPHIA, PA., April 30, 1907.

The Iron and Steel trades have assumed an attitude of unexpected strength and activity. In some quarters the tension is extremely great, as both makers and consumers fear that the Pig Iron supply during the next few months will be inadequate for current requirements. The scarcity of Iron was never more strongly felt than it is at the present time, and while prices are not much dearer, it is due to the forbearance of sellers rather than to anything in the ordinary business conditions. May and June deliveries may sometimes be had at \$24.50 to \$25, delivered, for No. 2 X Foundry, but for spot lots anywhere from \$25.50 to \$26.50 is gladly paid for the accommodation. Prices are governed to some extent, however, by the quantity of Iron taken for the later months; or that statement might be reversed—that is to say, if a buyer will take six months' Iron he can get a lower quotation than by taking only second and third quarter Iron, but it is scarce anyhow, and holders discriminate very carefully before they name a firm quotation. If this condition of affairs continues very much longer there will certainly be great danger of an advance in prices, which would be a misfortune as regards the ultimate outcome. But under such conditions it is extremely difficult to keep prices under control, and is only made possible by the continued arrivals of English and Scotch Iron, which have done much to relieve the stringency and to prevent undue inflation in values. Many large buyers are becoming quite anxious to cover the remainder of their requirements for the last half of the year, yet they are afraid to do so considering the comparatively low prices obtainable for the finished product, but the situation is so strong that it begins to appear as though, if consumers of Pig Iron were going to do anything like a full average business during the remainder of the year, they will be compelled to make their purchases of Pig Iron within the next two or three weeks. It is a bold venture to do so, yet there appears to be no alternative but to secure the Iron when it can be had and take chances on prices for the finished product. The next week or 10 days will doubtless be a period of very great importance, and may also include a general adjustment of prices of both Pig Iron and finished material, which from present appearances would mean higher prices all around.

**Pig Iron.**—It is hardly possible to give exact quotations at the present time. Ordinary business transactions appear to be in some measure left to chance. The price that would be quoted to a consumer depends altogether upon the character of the buyer; that is to say, if he is one whose business is of great importance and is therefore highly valued, sellers would try to give all the accommodation that would be possible, but with such a scarcity of material it seems like throwing money away to make concessions from the usual rates, as there is no Pig Iron of any description on the market that would not be promptly taken at full prices. The rule during the last two or three weeks has been that any buyer who would take last quarter Iron should have a comparatively favorable quotation on the third quarter, but the furnaces claim that they have so little Iron left that they have no alternative but to divide it around pro rata in quantities as may seem desirable. This applies particularly to Foundry Irons, which, of course, have a wider field than other descriptions, purchases ranging from 50 to 200 or 300 tons up to 5000 and 10,000 ton lots. Basic Iron, however, usually goes in blocks of 5000, 10,000 or 20,000 tons and upward, and it is this class of trade that will probably have the most difficulty during the next two or three months. Buyers have held themselves in abeyance during the past few weeks, but the time has come when contracts must be renewed, and where the Iron is to be found is a problem yet to be solved. If consumptive requirements during the remainder of the year are to be as large as seems probable, the shortage of material is liable to be a most serious matter, and in the meantime that is the problem of commanding interest. Prices under such conditions are difficult to quote, but in general terms it may be said that they are easily 25c. dearer than they were last week—that is, as regards Foundry grades and Basic Iron. Not much business has been done in the latter in this territory, although sales have been made for the New York District at prices said to be over \$25, delivered during the second quarter. Some business has been done locally, but in small tonnages, as there are no large lots that can be made available at the present time. Foundry grades are as strong as they have ever been, and it is a question of getting the Iron rather than a question of price, as consumers are in some cases running with not more than three or four days' or a week's supply to fall back upon, and deliveries are very uncertain, so that prices are liable to change, according to the necessity of the buyer for an immediate supply. Middlesbrough Iron is stronger and commands \$21 to \$21.50, alongside ship, and Scotch for the same delivery about \$23.50. Several cargoes of English Iron are due to arrive here the coming month, so that it is hoped that the supply of this article will do much to make up for the shortage in American Iron. Quotations for east-

ern Pennsylvania and adjoining districts are about as follows for deliveries in buyers' yards:

Spot No. 2 X Foundry.....\$25.75 to \$26.50  
Second Quarter 1907.

No. 2 X Foundry.....\$24.50 to \$25.25  
Basic.....23.75 to 24.25  
Low Phosphorus.....27.00 to 27.50  
Gray Forge.....22.50 to 22.75  
Middlesbrough, ex ship.....21.00 to 21.50

Third Quarter 1907.

No. 2 X Foundry.....\$24.00 to \$24.50  
Basic.....23.00 to 23.50  
Low Phosphorus.....26.75 to 27.00  
Gray Forge.....22.25 to 22.50

Fourth Quarter 1907.

No. 2 X Foundry.....\$23.00 to \$23.50  
Basic.....22.50 to 23.00  
Gray Forge.....21.75 to 22.00

**Ferroalloys.**—There has been some good business during the past week, and sales in round lots are reported at \$66 for delivery the last half of the year. Asking prices are now \$1 or \$2 more, and for spot lots \$69 to \$71 would probably have to be paid.

**Steel.**—Business is more active than it has been for some time, and consumers have been willing to pay somewhat better figures than they have recently offered. Sales in good sized lots have been made at \$32.50 to \$33, delivered, for ordinary Steel Billets, and \$37 to \$38 for Forging Steel. The extreme strength in raw materials compels manufacturers to get better prices than buyers have hitherto felt like paying.

**Plates.**—The market cannot be said to be very active, although the mills are busy on specifications on old contracts. There is a fair amount of new business, but there are some evidences of a desire to make sales, and to accomplish which it is said that prices are not fully maintained, although, as a rule, they stand at about last week's prices, as follows:

	Carload. Cents.	Part carload. Cents.
Tank, Bridge and Boat Steel.....	1.95½	2.03½
Flange or Boiler Steel.....	2.23½	2.28½
Marine.....	2.53½	2.58½
Locomotive Firebox Steel.....	2.63½	2.68½

The above are base prices for ¼-in. and heavier. The following extras apply:

	Extra per 100 lb.
3-16-in. thick.....	\$0.10
Nos. 7 and 8, B. W. G.....	.15
No. 9, B. W. G.....	.25
Plates over 100 to 110 in.....	.05
Plates over 110 to 115 in.....	.10
Plates over 115 to 120 in.....	.15
Plates over 120 to 125 in.....	.25
Plates over 125 to 130 in.....	.50
Plates over 130 in.....	1.00

**Structural Material.**—There is no particular pressure in the demand for Structural Material, although the mills are turning out about a normal tonnage. Deliveries are tolerably easy, however, and prices while nominally unchanged are subject to slight concessions when the order is a particularly desirable one. We quote, as before, 1.83½c. to 2c. for Beams, Angles and Channels, according to specification.

**Sheets.**—There is no abatement in the demand for Sheets. Mills have all they can do to meet the demand for prompt shipments, so that prices are firm as last quoted, which are as follows for mill shipments, subject to the usual advance for small lots: Nos. 18 to 20, 2.80c.; Nos. 22 to 24, 2.90c.; Nos. 25 to 26, 3c.; No. 27, 3.10c., and No. 28, 3.20c.

**Old Material.**—It is a most difficult matter to quote the market satisfactorily. The shortage of Steel and one or two other specialties unsettles the entire market, so that prices are liable to change color at any moment. It is pretty clear, however, that in spots there is a good market for No. 1 Steel at \$19, and it is said that \$19.50 for a large tonnage of first-class Steel would not go begging for a buyer. Other grades vary somewhat, but on the whole prices have a strong undertone, with bids and offers about as follows for deliveries in buyers' yards:

Steel Crops and Rails.....	\$19.25 to \$19.50
No. 1 Steel Scrap.....	18.75 to 19.50
Low Phosphorus.....	23.50 to 24.50
Old Steel Axles.....	21.75 to 22.25
Old Iron Axles.....	30.50 to 31.50
Old Iron Rails.....	27.25 to 27.50
Old Car Wheels.....	24.00 to 25.00
Choice No. 1 R. R. Wrought.....	20.50 to 21.00
No. 1 Yard Scrap.....	18.50 to 19.00
Long and Short.....	18.00 to 18.50
Machinery Scrap.....	21.00 to 21.50
Wrought Iron Pipe.....	17.00 to 17.50
No. 1 Forge Fire Scrap.....	16.50 to 17.00
No. 2 Light.....	11.50 to 12.00
Wrought Turnings.....	16.75 to 17.25
Axle Turnings.....	17.00 to 17.25
Stove Plate.....	17.50 to 18.00
Cast Borings.....	16.00 to 16.25
Grate Bars.....	16.00 to 16.50

**Bars.**—There is no great buoyancy in the demand for Bar Iron, although prices for first-class Refined Iron are firm at a minimum of 1.83½c., with the usual addition for less than carload lots. Some Iron is said to be offered at slightly lower figures, but the quality is not such as will pass critical judgment, most of it being made from Scrap Material. Steel Bars are scarce for prompt deliveries and com-

mand about the same figures as Refined Iron, although for third quarter delivery buyers could do a little better. Prices of Refined Iron are entirely too low considering the cost of material. To show anything like a reasonable margin quotations should be at least one to two-tenths higher.

## Cincinnati.

FIFTH AND MAIN STS., May 1, 1907.—(By Telegraph.)

**Pig Iron.**—Market conditions are gradually assuming more strength, and the situation, according to even the more conservative interests, is beyond expectations. Inquiry for the third quarter and last half shows considerable activity, and prices for this delivery show a tendency toward hardening. One of the large producing interests of the South, which for some weeks has been on an \$18.50, Birmingham, basis, has now withdrawn this quotation, and will consider nothing less than \$19, while another large interest in the same district is now quoting \$20 for third quarter and \$19.50 for last half. This practically leaves no \$18.50 Iron on the market for this delivery, and apparently firmly establishes the \$19 basis figure. A local foundry bought 700 tons at ruling quotations, for last half delivery. One melter in southern Ohio is to close to-day for about 1000 tons, same delivery. One large interest is inquiring for 3900 tons, 3000 of which is for last half and remainder for second quarter delivery. Inquiry contemplating various quantities of 200 to 500 is quite general, and is coming from sections of the country that are not contiguous, and which is not usually the case under ordinary circumstances or conditions. The demand for second quarter or nearby delivery Iron is less urgent than it has been, and prices for this delivery have eased off to some extent, although they are somewhat erratic and more or less flexible, and range from \$21 to \$21.50, Birmingham. It begins to look as though the Iron market for the remainder of the year would be a repetition of the one preceding, and that second and third quarter prices will gradually change the one to meet the other until one basis is firmly established for all deliveries. Freight rates from Hanging Rock District to Cincinnati are \$1.15, and from Birmingham, \$3.25. We quote for second quarter delivery, f.o.b. Cincinnati, as follows:

Southern Coke, No. 1.....	\$24.75 to \$25.25
Southern Coke, No. 2.....	24.25 to 24.75
Southern Coke, No. 3.....	23.75 to 24.25
Southern Coke, No. 4.....	22.75 to 23.25
Southern Coke, No. 1 Soft.....	24.75 to 25.25
Southern Coke, No. 2 Soft.....	24.25 to 24.75
Southern Coke, Gray Forge.....	21.75 to 22.25
Southern Coke, Mottled.....	20.75 to 21.25
Ohio Silvery, 8 per cent. Silicon.....	30.65 to 31.15
Lake Superior Coke, No. 1.....	24.65 to 25.15
Lake Superior Coke, No. 2.....	24.15 to 24.65
Lake Superior Coke, No. 3.....	23.65 to 24.15

### Car Wheel Irons.

Standard Southern Car Wheel.....	\$29.00 to \$29.50
Lake Superior Car Wheel.....	27.50 to 28.00

**Coke.**—The market is weak, the demand being rather light, and prices are a shade lower. We quote the best brands of Connellsville and Virginia Foundry from \$3.35 to \$3.50 f.o.b. ovens.

**Finished Iron and Steel.**—Orders for Structural Shapes and Plates continue quite heavy, and a large tonnage has been booked for the latter half of the year. Deliveries of Plates are unchanged, while Structural Shapes for prompt shipment are difficult to obtain. Rail mills are booking orders for next year, while one of the large interests is offering quite a tonnage for delivery during the next three months. We quote, f.o.b. Cincinnati, as follows: Iron Bars, carload lots, 1.93c., with half extras; smaller lots from store, 2c., with full extras. Steel Bars, carload lots, 1.73c., half extras, smaller lots from store, 1.95c., with full extras. Base Angles, carload lots, 1.83c. Beams and Channels, carload lots, 1.83c., base. Plates, ¼-in. and heavier, carload lots, 1.83c., base, and smaller lots from store, 2.25c. Sheets, No. 16, carload lots, 2.05c., and smaller lots from store, 2.60c.; No. 14, carload lots, 1.95c., and smaller lots from stock, 2.50c. Steel Wire, 1 x ¼ in. or heavier, 1.93c. in carload lots.

**Old Material.**—The market for Scrap is rather quiet and prices, while apparently unchanged, are subject to more or less fluctuations. We quote dealers' prices, f.o.b. Cincinnati, about as follows:

No. 1 R. R. Wrought, net ton.....	\$16.50 to \$17.00
Cast Borings, net ton.....	9.00 to 9.50
Steel Turnings, net ton.....	12.00 to 12.50
No. 1 Cast Scrap, net ton.....	17.50 to 18.00
Old Iron Axles, net ton.....	25.50 to 26.00
Old Iron Rails, gross ton.....	24.00 to 25.00
Old Steel Rails, long, gross ton.....	17.50 to 18.00
Relaying Rails, 56 lb. and up, gross ton.....	28.25 to 29.25
Old Car Wheels, gross ton.....	24.00 to 24.50
Low Phosphorus Scrap, gross ton.....	19.50 to 20.00

Robert W. Hunt & Co., engineers, have removed their New York offices from 66 Broadway to the new West Street Building, 90 West street.



## Pittsburgh.

PARK BUILDING, May 1, 1907.—(By Telegraph.)

**Pig Iron.**—We note an active inquiry for Bessemer, Malleable and Basic Iron for third and fourth quarter delivery, with the available supply very limited. It now looks as though there will be a shortage in the supply of Pig Iron in the last half of the year, although the production will be increased by the starting up of new furnaces, the first of which will be making Iron this month and the other early in June. These two stacks will have a daily output of 1200 tons, and with this additional Iron the Carnegie Steel Company will probably not be a buyer of Bessemer Iron in the future as it has been in the past. The minimum of the market on Bessemer and Basic for last half of the year is \$22.50 to \$23, Valley furnace, with the probability that \$23 would have to be paid to bring out any considerable tonnage. Small lots for May and June shipment are firm at \$23, Valley furnace. Several large consumers of Foundry Iron are in the market for last half of the year tonnage. We continue to quote Northern No. 2 Foundry at \$24 to \$25 for prompt delivery; \$23 to \$24 for June, and \$22 to \$23, Valley furnace, for last half of the year delivery. There is a good deal of inquiry for Forge Iron, and we note a sale of 4000 tons of Northern Forge for last half of the year at \$21.50, Valley furnace, and 1000 tons for third quarter at \$22, Valley furnace.

**Steel.**—The shortage in the supply of Billets and Sheet and Tin Bars seems to be more acute, and Steel for reasonably prompt delivery is very hard to obtain and commands high prices. We quote Bessemer Billets at \$30.50 to \$31, and Open Hearth Billets at \$31.50 to \$32, Pittsburgh. Sheet and Tin Bars in random lengths are held at \$30.50 to \$31, maker's mill, Pittsburgh or Youngstown.

(By Mail.)

At no time this year has the situation as regards the supply of Bessemer, Malleable Bessemer and Basic Pig Iron been as tight as it is at present. It is claimed that there are not over 15,000 tons of Iron unsold by the Valley furnaces for balance of this year delivery, while there are actual inquiries in the market for 25,000 tons or more. Some fairly large consumers of Bessemer and Basic Iron have been caught napping in the fact that they have failed to cover their requirements, which they could have done two or three weeks ago on the basis of \$21 at furnace, while now they will have to pay probably \$23, and may have trouble to find furnaces that are in position to take their tonnage and make the deliveries wanted. It would seem that the absolute minimum of the market on Bessemer and Basic Iron for last half of the year is \$22.50 to \$23 at maker's furnace. The situation in Steel seems to be getting worse for the buyer, and Bessemer Billets for reasonably prompt shipment are held at \$30.50 to \$31, Pittsburgh, with reports of sales at practically the latter price. Open Hearth Billets can hardly be had at any price, being nominally quoted at \$32 to \$32.50, Pittsburgh. New business in Finished Iron and Steel is holding up fairly well, but showed a falling off in April as compared with March, and a still larger falling off as compared with February. However, the mills have contracts covering their output for some months, against which consumers are specifying very liberally. The Scrap trade is showing signs of betterment, prices being firmer and on some lines slightly higher. Spot Coke continues weak, and Connellsville Furnace is offered as low as \$2.40 at oven for prompt shipment.

**Ferromanganese.**—Prices continue weak, with indications of going still lower. A sale of about 50 tons of foreign, 80 per cent., for prompt delivery is reported at about \$70, Pittsburgh. We quote foreign, 80 per cent., at \$70, Pittsburgh, for prompt shipment, while for delivery over second half of the year \$61 to \$62, Baltimore, is quoted, or \$63 to \$64, Pittsburgh.

**Muck Bar.**—Quite an active demand is experienced, with the available supply very limited and prices firm. We quote best grades made from all Pig Iron at \$37 to \$37.50, Pittsburgh, and some tonnage is likely to be put through at the inside price this week.

**Rods.**—Bessemer and Basic Rods continue scarce, and concerns that can make reasonably prompt deliveries can come very near naming their own prices. We quote Bessemer and Basic Rods at \$37 to \$38, Pittsburgh, the latter price being for reasonably prompt shipment.

**Skelp.**—It is reported that a very large consumer has placed contracts for a round tonnage of Sheared Iron Skelp for delivery over the last half of the year on the basis of 2.25c. to 2.27½c., Pittsburgh. None of the Skelp mills is in position to take on tonnage for delivery before August, as they are sold up for the next three months at least. For delivery in August or later we quote: Grooved Steel Skelp, 1.85c. to 1.90c.; Sheared Steel Skelp, 1.90c. to 1.95c.; Grooved Iron Skelp, 2.20c. to 2.25c.; Sheared Iron Skelp, 2.30c. to 2.35c.

**Steel Rails.**—The Carnegie Steel Company is having a very active demand for Steel Ties weighing 14½ lb. per foot for suburban electric lines, these when imbedded in concrete making a very solid road bed. The same company took contracts last week for about 6000 tons of Standard Sections and about 1500 tons of Light Rails in new orders and contracts on specifications. Some of the railroads, notably the Erie, have postponed deliveries of Steel Rails, but the tonnage involved is not serious, and will no doubt be taken out later when the money market is easier. We quote Light Rails as follows: \$33 to \$34 for 20 to 45 lb.; \$34 to \$35 for 16-lb., and \$35 to \$36 for 12-lb., at mill. Angle Splice Bars are held at 1.65c., and Standard Section Rails at \$28, at mill.

**Structural Material.**—New business booked by the American Bridge Company in April amounted to a little over 50,000 tons, making one of the best months in its history. This company has taken about 4500 tons for the new Open Hearth building of the Carnegie Steel Company at its Ohio Works, Youngstown. The John Eichleay, Jr., Company has taken three office buildings in San Francisco and one in Montgomery, Ala., calling for about 2000 tons of Steel; also an annex for the Presbyterian Hospital, Allegheny, 300 tons. The Pittsburgh Steel Construction Company has taken some work for the Tennessee Coal, Iron & Railroad Company, Birmingham, Ala., about 500 tons. A good deal of tonnage is in sight. Mill deliveries on Steel Bars and Plates are much delayed, but on Shapes are fairly prompt. We quote: Beams and Channels, up to 15-in., 1.70c.; over 15-in., 1.80c.; Angles, 3 x 2 x ¼ in. thick up to 6 x 6 in., 1.70c.; 8 x 8 and 7 x 3½ in., 1.80c.; Zees, 3-in. and larger, 1.70c.; Tees, 3-in. and larger, 1.75c. Under the Steel Bar card Angles, Channels and Tees under 3-in. are 1.70c., base, for Bessemer and Open Hearth, subject to half extras on the Standard Steel Bar card.

**Plates.**—The Carnegie Steel Company is practically sold up on Plates for the balance of this year and has been prorating orders for some time. Other leading Plate concerns are sold up for two or three months, while a few can make deliveries in from three to four weeks, on which they are able to get premiums of \$2 to \$3 a ton. The consumption of Plates by the Steel car interests is enormous, and a great deal of tonnage is going to new blast furnace construction. The Riter-Conley Mfg. Company has taken a contract for four blast furnaces for the Indiana Steel Company, Gary, Ind., in which a very large tonnage of Plates will be used. For prompt shipment premiums of \$2 to \$3 a ton continue to be paid over official prices, which are as follows: Tank Plate, ¼-in. thick, 6¼ in. up to 100 in. wide, 1.70c. to 1.80c., base, at mills, Pittsburgh. Extras over this price are as follows:

	Extra per 100 lb.
Gauges lighter than ¼-in. to and including 3-16-in.	
Plates on thin edges.....	\$0.10
Gauges Nos. 7 and 8.....	.15
Gauge No. 9.....	.25
Plates over 100 to 110 in.....	.05
Plates over 110 to 115 in.....	.10
Plates over 115 to 120 in.....	.15
Plates over 120 to 125 in.....	.25
Plates over 125 to 130 in.....	.50
Plates over 130 in.....	1.00
All sketches (excepting straight taper Plates varying not more than 4 in. in width at ends, narrowest end being not less than 30 in.).....	.10
Complete Circles.....	.20
Boller and Flange Steel Plates.....	.10
"A. B. M. A." and ordinary Firebox Steel Plates.....	.20
Still Bottom Steel.....	.30
Marine Steel.....	.40
Shell Grade of Steel is abandoned.	

**TERMS.**—Net cash 30 days. For anticipated payments a maximum discount may be allowed at the rate of 6 per cent. per annum and for a longer time than 30 days interest shall be charged at the same rate per annum. Invoices paid within 10 days from date thereof, discount of ¼ of 1 per cent. is allowable. Pacific Coast base, 1.60c., f.o.b. Pittsburgh, with all rail tariff rate of freight to destination added, no reduction for rectangular shapes 14 in. wide down to 6 in. of Tank, Ship or Bridge quality.

**Sheets.**—Consumers of Sheets are having trouble in finding mills that are in position to take on tonnage for reasonably prompt shipment, and in some cases are willing to pay premiums of \$2 to \$3 a ton over official prices, if mills will guarantee deliveries. The continued shortage in Sheet Bars, which seems to be getting more acute, and the higher prices ruling for them, would seem to warrant an advance in prices, and announcement by the leading interest of higher prices would not be a surprise to the trade, but no official information as to an advance has been given out. We note that premiums of \$2 to \$3 a ton for prompt delivery are being paid, while regular prices for forward shipment are as follows: Blue Annealed Sheets, No. 10 gauge and heavier, 1.85c.; Nos. 11 and 12, 1.90c.; Nos. 13 and 14, 1.95c.; Nos. 15 and 16, 2.05c.; Box Annealed, Nos. 17 to 21, 2.35c.; Nos. 22 to 24, 2.40c.; Nos. 25 and 26, 2.45c.; No. 27, 2.50c.; No. 28, 2.60c.; No. 29, 2.75c.; No. 30, 2.85c. We quote Galvanized Sheets as follows: Nos. 10 and 11, 2.65c.; Nos. 12 and 14, 2.75c.; Nos. 15 and 16, 2.85c.; Nos. 17 to 21, 3c.; Nos. 22 and 24, 3.15c.; Nos. 25 and 26, 3.35c.; No. 27, 3.55c.; No. 28, 3.75c.; No. 29, 4c., and No. 30, 4.25c. We quote No. 28 Gauge Painted Roofing Sheets at \$1.85 per square, and Galvanized Roofing Sheets, No. 28 gauge, \$3.25



per square, for 2-in. corrugations. These prices are for carload lots, jobbers charging the usual advances.

**Hoops and Bands.**—A fair amount of new business is being placed and buyers are specifying liberally on contracts. For prompt delivery premiums of \$1 to \$2 a ton have been paid. For forward delivery we quote: Steel Hoops, 2c., and Bands for all purposes at 1.60c., base, half extras, as per Standard Steel card. These prices are for carload lots, f.o.b. Pittsburgh, plus full tariff rail rate to point of delivery, an advance of \$2 a ton being charged for less than carloads.

**Cotton Ties.**—The Cotton Tie season was opened on April 25, the price being fixed at 95c. a bundle on 3000-bundle lots and over, this being an advance of 10c. a bundle over prices for last year. Up to this time contracts for about 700,000 bundles have been placed with the mills.

**Tin Plate.**—A heavy tonnage has been placed for third and fourth quarter of the year delivery, and the outlook is that the Tin Plate mills will have all the business they can take care of this year. Some of the mills have not covered on Tin Bars for last half and are in doubt as to where their supply is coming from, as Bars are very scarce and are keeping the mills from making their full output of Tin Plate. We quote for third and fourth quarter delivery as follows: \$3.90 for 100-lb. Cokes, f.o.b. Pittsburgh, for 14 x 20 100-lb. Cokes, terms 30 days, less 2 per cent. off for cash in 10 days, on which price a rebate of 5c. a box is allowed for carload and larger lots.

**Steel Bars.**—It is beginning to look as though there will not be enough Steel Bars to supply the demand this year, which is abnormally heavy and seems to be increasing. In the last few years Steel Bars have come to be used for many new purposes, among these being reinforced concrete work, which is taking an enormous tonnage. We can cite the example of one large reinforced concrete concern which in 1900 used only 294 tons of Steel Bars, while in 1906 the same interest took over 42,000 tons, and will use a still larger tonnage this year. A few of the implement makers have placed contracts for Steel Bars for delivery over last half of the year, for which they paid the full price of 1.60c., Pittsburgh. The leading makers of Steel Bars, such as the Republic, Carnegie and Jones & Laughlin companies, are sold up for months and could readily get premiums for prompt deliveries, but are applying their entire output on contracts. The Crucible Steel Company is in position to make fairly prompt deliveries on Steel Bars, and has sold a good deal of tonnage as high as 1.80c., Pittsburgh, this being an advance of \$4 a ton over the official price. The demand for Iron Bars is quite active, but not quite as large as a month or two ago, and the mills can make better deliveries than on Steel. We quote Refined Iron Bars at 1.80c., Pittsburgh, and Steel Bars at 1.60c., base, half extras, f.o.b. Pittsburgh, these prices being for forward delivery.

**Spelter.**—The market is very dull and prices are weak. We quote prime grades of Western at about 6.60c., St. Louis, or 6.72½c., Pittsburgh, for forward delivery. For spot Spelter about 6.65c., St. Louis, is asked.

**Railroad Spikes.**—A continued active demand is seen for the smaller sizes of Railroad Spikes, the mills being sold up for two or three months ahead, but for Standard sizes the demand is not so active, and the mills can make reasonably prompt shipments. We quote Standard sizes at \$2.25 to \$2.30, and small sizes at \$2.45 to \$2.50 per 100 lb., f.o.b. Pittsburgh.

**Merchant Steel.**—We note a very active demand for Tire Steel, on which the mills are much behind in deliveries, while for other grades new business is only fair. The mills have a heavy tonnage on their books, but are making better deliveries than some time ago. Prices are firm, as follows: Smooth Finished Machinery Steel, 1.85c. to 2c., depending on quality; Flat Sleigh Shoe, 1.65c. to 1.75c.; Cutter Shoe, 2.15c. to 2.20c.; Toe Calk Steel, 2.10c. to 2.15c.; Railroad Spring Steel, 1.75c. to 1.80c.; Crucible Tool Steel, 6c. to 8c., for ordinary grades, and 10c. and upward for special grades. We quote Cold Rolled Shafting at 50 per cent. off in carloads, and 45 per cent. in less than carloads, delivered in base territory.

**Merchant Pipe.**—A part of an order for 20 miles of 16-in. Steel Line Pipe has been placed with Spang, Chalfant & Co. We also note the placing of a contract for 17 miles of 10-in. Line Pipe for delivery at Charleston, W. Va. The general demand for Pipe continues abnormally heavy, and none of the mills is in position to give customers their full requirements, but are cutting down tonnage wherever it is possible to do so. One great trouble the Pipe mills are having at present is to get enough labor, and at this writing Pipe capacity is actually standing idle for lack of men. The Youngstown Sheet & Tube Company now has 50 puddling furnaces making Muck Bar for use in its Iron Pipe, Casing and Tubing, particularly for oil and gas lines, for which it has a very large tonnage on its books. There is a good deal of conjecture as to what prices will be named for Pipe on June 1 by the leading interest. The extreme discount on Merchant sizes of Iron Pipe is now about 67 per cent. on ¾ to 6 in., on which a half point and sometimes a point is

allowed to the large trade. The extreme discount on Merchant sizes of Steel Pipe, ¾ to 6 in., is now about 73 per cent. to the large trade. Official discounts on Steel Pipe are as follows:

	Merchant Pipe.	
	Black.	Galv.
¾ to 1 in.	64	48
1 to 1½ in.	66	52
1½ to 2 in.	68	56
2 to 3 in.	72	62
3 to 4 in.	72	62
4 to 6 in.	67	52
Extra strong, plain ends:		
¾ to 1 in.	57	45
1 to 1½ in.	57	52
1½ to 2 in.	64	52
2 to 3 in.	60	48
Double extra strong, plain ends:		
¾ to 1 in.	53	42

Official discounts on Iron Pipe, which are shaded one-half point or more to the large trade, are as follows, f.o.b. Pittsburgh:

	Standard Genuine Iron Pipe.	
	Black.	Galv.
¾ to 6 in.	67	57
1 to 1½ in.	62	50
1½ to 2 in.	60	42
2 to 3 in.	58	42
3 to 4 in.	62	47
Extra Heavy Iron Pipe, Plain Ends:		
¾, 1, and 1½ in.	62	40
1½ to 4 in.	59	47
4½ to 8 in.	55	42

**Boiler Tubes.**—New demand for both Locomotive and Merchant Tubes continues abnormally heavy, and for reasonably prompt deliveries premiums of \$1 to \$2 a ton are being paid over official discounts, which for forward delivery are as follows:

	Boiler Tubes.	
	Iron.	Steel.
1 to 1½ in.	41	47
1½ to 2½ in.	42	59
2½ in.	47	61
2½ to 5 in.	52	65
6 to 13 in.	42	59

**Coke.**—It is evident that a good many blast furnaces overbought some time ago and are now using Coke from their stock piles, which is throwing a good deal of surplus Coke on the market, and it has to be moved at practically any price it will bring. Connellsville Furnace Coke that is loaded on cars can be had for prompt shipment as low as \$2.40 a ton at oven, and Connellsville 72-hr. Foundry as low as \$3 to \$3.25 at oven. On contracts for last half of the year delivery Connellsville Furnace Coke is held at \$2.75 to \$2.85 and 72-hr. Foundry at \$3.50 to \$3.75 a ton at oven. The output continues enormously heavy, the Upper and Lower Connellsville regions having made last week 415,300 tons. There are 34,325 ovens in these two regions, of which 32,193 were active last week and only 2132 were idle.

**Iron and Steel Scrap.**—The higher prices ruling for Pig Iron and the sold up condition of the blast furnaces for all of this year delivery are being reflected in Scrap, which is decidedly firmer on all kinds, and we can note a better inquiry. The list of the Pennsylvania Lines, West, is out, and bids are to be received for this Scrap on May 2, which will give a very good line on the market. There have been some large purchases of Heavy Steel Scrap in the past two weeks by leading consumers, and the market is slightly higher. It is believed that prices of Scrap are as low as they will go for the present at least, and in fact the tendency of the market is upward. There is more inquiry than for some time, especially for Heavy Steel Scrap, Low Phosphorus Melting Stock and Cast Scrap. We have advanced prices on Heavy Steel Scrap and Low Phosphorus Melting Stock and now quote as follows: Heavy Steel Scrap, \$18 to \$18.50, for Pittsburgh, Sharon and Steubenville delivery, prices depending on quality. No. 1 Wrought Scrap is \$19 to \$19.25; No. 2 Wrought Scrap, \$17.75 to \$18; Old Steel Rails, short pieces, \$18.25 to \$18.50; Old Steel Rails, re-rollers, \$18.50 to \$18.75; Bundled Sheet Scrap, \$16.75 to \$17; Machine Shop Forgings, \$15.50 to \$15.75; Low Phosphorus Melting Stock, \$22 to \$22.25; Old Car Wheels, \$26 to \$26.50; Steel Axles, \$21 to \$21.50; Cast Iron Borings, \$13.50 to \$13.75; Grate Bars, \$16.25 to \$16.50; Stove Plate, \$16 to \$16.25; No. 1 Cast Scrap, \$22. All above prices are per gross ton, f.o.b., Pittsburgh, unless otherwise specified. We note sales of 500 tons of No. 1 Cast Scrap at \$22, 4000 tons of Heavy Steel Scrap at \$18 and 1000 tons of Low Phosphorus Melting Stock at \$22.50, Pittsburgh.

The Carpenter Steel Company, Reading, Pa., has appointed the Pittsburgh Steel Supply Company, Frick Building Annex, Pittsburgh, its general sales agent in the Pittsburgh District.

The offices of the H. K. Porter Company, builder of Light Locomotives, have been removed from 541 Wood street to 1207 Union National Bank Building, Pittsburgh.

The offices of the L. A. Green Company, dealer in Iron and Steel Scrap, Rails, &c., have been removed from 807 Keystone Building to 419 Park Building, Pittsburgh.

## Cleveland.

CLEVELAND, OHIO, April 30, 1907.

**Iron Ore.**—The 1907 season can now be said to be fully open. The first Ore cargo from Lake Superior reached this city April 28, and a few other cargoes have since arrived at Lake Erie ports. Beginning with next week, it is expected that Ore will be coming down the lakes in very satisfactory shape. Advices received from shipping ports on the upper lakes indicate that Ore is now moving in good shape from the mines to the docks, the bad weather conditions that delayed the movement for a week or two having disappeared. As far as the shipping end is concerned, indications are very favorable for a large movement of Ore this season. There are no labor difficulties in sight on the lakes, and it is expected that the present tonnage will be ample to move all the Ore offered. Nearly every Ore shipper covered with vessel tonnage last December, but there is still an occasional inquiry for boat tonnage for Ore. The Ore market remains firm, but quiet. With practically all the season's high grade Ore sold months ago there has been very little activity for a number of weeks, although there is still an occasional inquiry. Nominal prices for 1907 delivery are as follows at Lake Erie docks per gross ton: Old Range Bessemer, \$5; Mesaba Bessemer, \$4.75; Old Range Non-Bessemer, \$4.25; Mesaba Non-Bessemer, \$4; Siliceous Bessemer, \$2.75; Siliceous Non-Bessemer, \$2.50.

**Pig Iron.**—There has been a heavy buying movement in Northern Foundry Iron for the second half delivery during the past week, and as a result prices are stronger than they have been for some time. It is estimated that the total sales of Northern Foundry in this market during the week for the last half have aggregated over 30,000 tons. The sales were largely in 1000-ton lots to foundries in this district. Sales of about 12,000 tons of Foundry Iron by a local interest having a western Pennsylvania furnace to melters in New York and the Pittsburgh District are reported to have been made during the week. The heavy sales of No. 2 have been made at \$22 to \$22.50, at furnace, for the last half, the greater part of the tonnage being sold at the former price, but it is doubtful whether any No. 2 could be bought in the local market now for less than \$22.50, the furnaces holding that as their minimum price. The furnaces are now asking \$23 for Northern Foundry Iron for the entire last half, as well as the third quarter, and some furnaces that are pretty well sold out are holding their Iron for the same price for the fourth quarter delivery. Others are asking \$22.50 for that delivery. Foundry as well as Malleable and Bessemer Iron is pretty well sold up to October 1, and the furnaces are disposed to demand high prices for the last quarter. Some large consumers of Foundry Iron have not yet covered for the last half, and furnacemen are freely predicting that the melters' requirements for the balance of the year will exceed the production of the furnaces. Spot Foundry Iron is still in good demand, the supplies of all the consumers seeming to run a little short. Sales of No. 2 Foundry for spot delivery have been made during the week at \$25 to \$26, Valley furnace, some furnaces reporting that they have had no trouble in getting the latter price. Bessemer and Basic Iron continue very strong, and inquiries are numerous for both, the demand seeming to exceed the supply. A dealer who wanted a small tonnage of Bessemer for the last half made inquiries in the local market during the week but was unable to get a quotation. A Basic Iron producer who has a little Iron left for the fourth quarter is holding the price at \$23, Valley furnace. Southern Iron is scarce both for prompt shipment and for the third quarter, the most of the furnaces being well sold up till October. The price is firm, at \$19, Birmingham, for last half and third quarter. The Republic and Tennessee companies have withdrawn their quotations on Southern Iron for the last half, apparently being well sold out for the entire year. A fair amount of British Iron has been sold in the local market during the week, No. 3 Middlesbrough bringing \$24.50, delivered, for prompt delivery. Quotations for the last half of 1907, f.o.b. Cleveland, are as follows:

Bessemer .....	\$22.85
Northern Foundry, No. 1.....	\$23.00 to 23.50
Northern Foundry, No. 2.....	22.50 to 23.00
Northern Foundry, No. 3.....	22.00 to 22.50
Southern Foundry, No. 2.....	23.35
Gray Forge.....	21.00 to 21.50

**Coke.**—The market is quiet and firm, producers showing no tendency to cut prices further. There is considerable activity in Foundry Coke, both for early shipment and for the balance of the year. We quote Foundry Coke at \$3.40 to \$3.50. Furnace Coke is held at \$2.60 to \$2.75.

**Finished Iron and Steel.**—Specifications continue to come in very heavily, especially for Plates and Steel Bars, and because of the poor deliveries some Bar consumers are sending in their specifications on contracts for deliveries up to the end of the year. Some new business is being booked for all kinds of Finished Material, but the buying is not nearly as heavy as it was a few weeks ago. The large consumers are pretty well covered, however, for the balance of the year, and the falling off in the buying movement was

expected. Taken altogether, deliveries show no improvement. Steel Bars for quick delivery are as scarce as ever, and some industrial plants are seriously affected by their inability to get the material they need and for which they sent in specifications months ago. The leading producers of Steel Bars are turning down orders nearly every day because of their inability to make deliveries until along toward the close of the year. A leading Steel Bar interest has authorized the taking of orders for delivery until July, 1908, but as yet has closed no contracts for next year's business. Steel Bar contracts for future deliveries are being made on the basis of 1.60c., Pittsburgh. The Bar Iron situation remains easy, and some new business is being booked at 1.70c. to 1.75c., Pittsburgh, the former price being quoted for good orders. Deliveries in Iron Bars are promised in from four weeks to three months. Mills that can make fairly good deliveries report a good sized amount of new business in Plates at the established mill price of 1.70c. One mill that appears to be in better shape than others is promising deliveries in 30 days on Universal Plates, and deliveries in 60 to 90 days on Sheared Plates. The demand for Structural Material shows improvement, and specifications are coming in heavily. The larger mills are well loaded up, and are not promising deliveries of Structural Material within two or three months. Billets are in good demand, some sales having been made during the week at \$34, at mill, for Open Hearth Forging Billets, 4 to 6 in. sizes. There are inquiries in the local market for about 2000 tons of Traction Rails for which orders will probably be booked soon. The implement makers are slowly coming into the market for Steel Bars for the coming year, orders for about 3000 tons having been booked here during the week at the established price. Warehouse business continues heavy in all lines and stock prices are unchanged. Steel Bars are selling at 1.95c. to 2c. out of stock, and Iron Bars at 2c. Warehouse prices on Sheets are as follows: Blue Annealed, No. 10, 2.30c.; No. 28, One Pass Cold Rolled, 3.05c.; No. 28, Galvanized, 4.15c. The stock price on Boiler Tubes, 2½ to 5 in., is 64 per cent. discount, and on Black Iron Merchant Pipe, base sizes, 67 per cent. discount.

**Old Material.**—The market is a little weaker than a week ago, but prices remain about stationary. There is a great scarcity of all kinds of Old Material, but this scarcity does not tend to strengthen the market, as there is no demand. About the only activity during the week was a demand from the Pittsburgh District for considerable quantities of Railroad Cast. Turnings and Borings, for which there had been considerable demand recently, are weaker. Dealers see no indications of a better market in the near future. The only railroad offerings during the week were small lots by the Erie and Nickel Plate. Dealers' prices to the trade are as follows per gross ton, f.o.b. Cleveland:

Old Steel Rails.....	\$16.75 to \$17.00
Old Iron Rails.....	24.00 to 25.00
Steel Car Axles.....	21.50 to 22.50
Old Car Wheels.....	23.00 to 23.50
Relaying Rails, 50 lb. and over.....	31.00 to 32.50
Relaying Rails, under 50 lb.....	31.00 to 32.50
Heavy Melting Steel.....	16.75 to 17.00
Railroad Malleable.....	17.50 to 18.50
Agricultural Malleable.....	15.50
Light Bundled Sheet Scrap.....	16.00 to 17.00
Bundled Tin Scrap.....	17.00 to 19.00

The following quotations are per net ton, f.o.b., Cleveland:

Iron Car Axles.....	\$26.00 to \$27.00
Cast Borings.....	10.00 to 10.50
Iron and Steel Turnings and Drillings.....	12.50 to 13.00
No. 1 Bushing.....	14.50 to 15.00
No. 1 Railroad Wrought.....	17.00 to 17.50
No. 1 Cast.....	18.00 to 19.00
Stove Plate.....	14.50 to 15.00

## Birmingham.

BIRMINGHAM, ALA., April 28, 1907.

**Pig Iron.**—The buying movement which began here some 10 days ago has continued in increased proportions during the past week. As a result the one interest which has been offering Iron for the last half at \$18.50 has withdrawn from the market, stating that practically its entire production for the year has been booked and that it will accept no more orders at the present time. There is now very little Iron being offered here for any delivery except the last quarter, and at the rate orders are coming in this cannot last very long. Many conservative buyers have covered for their entire year's requirements and several deals are now pending. Quotations to-day are about as follows: Spot shipments, \$23; May and June, \$21.50 to \$22.50; third quarter, \$19 to \$19.50; last quarter, \$19. Some inquiries have been received for delivery during the first quarter of 1908, but producers are not disposed to treat them seriously, and so far as can be learned no definite offers have been made or orders booked for that period. Manufacturers are optimistic over the prospect for business during the closing months of this year, and the first part of next, and state that advanced prices over those now existing should prevail, while the buyers feel that considerable concession should be



made in prices on orders placed so far ahead. The Iron on the yards in the district is now below normal, with railroads furnishing all the transportation desired. Little complaint is also heard from customers as to time en route, which would indicate that the railroads are in much better shape for handling business than for some time. In view of all these facts it is rather astonishing that the demand for spot Iron continues to the extent it does.

**Cast Iron Pipe.**—Quotations on smaller sizes of Pipe have been advanced about \$1 per ton during the past week on account of the excessive demand, and the already large tonnage on the order books of the manufacturers. On the larger sizes prices remain unchanged, bookings not being so heavy. Many contracts ranging from 500 to 1000 tons are soon to be let, and bids for several of larger tonnage are now being considered. The city of Waterbury, Conn., will place a contract for from 2000 to 3000 tons early in May. Producers state that a further advance may be expected in the near future, as they have been forced to cover for their requirements of Iron for the last half at a much higher price than prevailed during the first half. Quotations on Water Pipe are as follows, per net ton: 4 to 6 in., \$36; 8 to 12 in., \$34; over 12-in., average, \$31, with Gas Pipe \$1 extra per ton.

**Old Material.**—The demand for Heavy Melting Scrap continues to exceed the supply, but with the exception of this grade sales have been very light during the past week. Dealers are getting good stocks of Wrought on yards, but express themselves as having every confidence in the situation. Quotations are approximately as follows, per gross ton, f.o.b. cars dealers' yards here:

Old Iron Rails.....	\$22.00 to \$22.50
Old Iron Axles.....	18.50 to 19.00
Old Steel Axles.....	16.50 to 17.00
Old Car Wheels.....	20.50 to 21.00
No. 1 Railroad Wrought.....	18.50 to 19.00
No. 2 Railroad Wrought.....	13.00 to 13.50
No. 1 Country Wrought.....	13.00 to 13.50
No. 2 Country Wrought.....	12.00 to 12.50
Wrought Pipe and Flues.....	13.50 to 14.00
Railroad Malleable.....	13.00 to 13.50
No. 1 Steel.....	14.00 to 14.50
No. 1 Machinery Cast.....	16.50 to 17.00
Stove Plate and Light Cast.....	12.50 to 13.00
Cast Borings.....	8.50 to 9.00

## Metal Market.

NEW YORK, May 1, 1907.

**Pig Tin.**—An exceedingly strong statistical position, as shown by the figures compiled by C. Mayer, secretary of the New York Metal Exchange, indicated clearly the reason for the remarkable advances during the last fortnight. The total visible supply on April 30 was 9839 tons, which is much smaller than any figures in recent years. It shows a falling off of over 3000 tons from the end of March and is even 1200 tons below the figures of a year ago. It will be recalled that when the statistics showing a visible supply of only 11,100 tons were issued at the end of April, 1906, this was a signal for a sharp advance which carried the London market well over £200 and the New York market up 9c. a pound in almost as many days. The deliveries during April were large, amounting to 3650 tons, and the stocks in the United States at the end of April were but 1308 tons, showing a falling off of over 500 tons, as compared with the end of the previous month. Shipments from the Straits were very light, being 1100 tons smaller than for the same months last year, and showing a falling off for the first four months of 1800 tons. The statistical position is fully as strong as expected, and 45c. Tin is just as confidently predicted as was 48c. Tin last year, and by the same people. Business during the week, while light, has been at daily advancing quotations, as on April 25 Tin sold at 42.30c., and on the following day at 42.50c. The market again advanced on Monday, and sales were made at 42.70c., while on April 30 small lots of Tin were sold at 42.85c. To-day sales have been made at 43.05c., which is the highest price so far this year. The London market closes firm, at £195 10s. for spot, and £193 10s. for futures.

**Copper.**—There has been a fair demand from European melters for May and June Copper, and exporters have been obliged to pay 24½c., and even more for Electrolytic for these deliveries. American consumers have also come into the market, but have bought sparingly. A sale of a small lot of 25 tons is noted to an American consumer at between 24.37½c. and 24.50c. Free bidding of 24.25c. by exporters late in the week for Electrolytic brought no offers, and with the sharp advance on the London Exchange to-day it is doubtful if anything can be secured for export at less than 24.50c. For nearby deliveries of round lots of Lake to domestic consumers, 25c. to 26c. is quoted. Electrolytic is also firmer at 24.37½c. to 25c. Casting grades have also been advanced, and the market would be represented by 23.12½c. to 23.50c. The larger selling interests continue to express the opinion that consumers will have to come into the market for Electrolytic, and pay their price of 25.25c., delivered, 30 days, and certainly the trend of events during

the week has tended to this view. Consumers have so generally held off for the past six weeks that they will shortly be compelled to enter the market and buy liberally. Taking into account past events of this character, it may be that orders will be of so large a volume as to give a temporary spurt to the market, and although the belief is current in all quarters that the price of Copper must recede before the end of the year, that question is only of academic interest at the present time. Manufacturers of finished lines, such as Sheet and Roll Brass, are now soliciting orders, which has not been the case for several months. The London market was buoyant to-day. Spot was held at an advance of £3 10s. over Tuesday's close and futures at an advance of £2 15s. The market, however, closed lower at £106 15s. for spot and £104 15s. for futures, while Best Selected was held at £114 10s. The exports during April were large, amounting to 17,263 tons from North Atlantic ports, but the imports are unusually heavy, amounting to 12,710 tons in March compared with 9900 tons during the same period last year. The imports for the first three months of this year show a gain of 7400 tons compared with the same time last year.

**Lead.**—Prices are easier in St. Louis, at 5.92½c. to 5.95c. In New York quotations are unchanged, at 6.10c., with a smaller volume of business ruling than a week ago.

**Spelter.**—The long period of inactivity in this market has been followed by a decline in the price, with little or no stimulus to the volume of business. In St. Louis Spelter for prompt shipment is quoted at 6.45c., and nearby deliveries in New York can be had at 6.60c. to 6.65c.

**Antimony.**—The principal interest in this market centers around an auction sale taking place to-day, which may be the forerunner of several, it being made for forced accounts. Prices are largely nominal, at 23c. to 24c., for Cookson's; 21c. to 22c., for Hallett's, and 19c. to 20.50c. on outside brands. These prices might be shaded on a firm offer for a round lot.

**Ferroalloys.**—There is little business in Ferromanganese, but prices are unchanged at \$68 to \$70 for prompt shipments, and \$65 to \$67 for deliveries for the second half. For large lots for future shipment the above prices might be shaded. Some sales of carload lots of Ferrosilicon have been made at \$110 and \$112 for May delivery, but second half shipments can be had at \$104, upward, for 50 per cent. The scarcity of the higher grades has resulted in an active demand for furnace goods, or 11 per cent., which is held at \$32.50, Albaugh. May shipments would command a premium of from 50c. to \$1 a ton over this figure. Some sales of Silico Spiegel have been made at \$46, Baltimore.

**Tin Plate.**—The activity in this trade is largely confined to bright plates. Prices are unchanged, at \$3.90 f.o.b. Pittsburgh, and \$4.09 f.o.b. New York, for 100 lb., 1C Coke Plates. Foreign Plates are 1½d. higher in Swansea, at 14s. 10½d.

**Old Metals.**—There has been an advance in dealers' selling prices, but other than this there are few signs of any renewed activity in the trade. Dealers' selling prices are largely nominal, as follows:

	Cents.
Copper, Heavy and Crucible.....	22.50 to 23.00
Copper, Heavy and Wire.....	22.00 to 22.50
Copper, Light and Bottoms.....	20.00 to 20.50
Brass, Heavy.....	15.50 to 16.00
Heavy Machine Composition.....	19.00 to 19.50
Clean Brass Turnings.....	14.25 to 14.75
Composition Turnings.....	17.25 to 17.50
Lead, Heavy.....	5.75
Lead, Tea.....	5.45
Zinc Scrap.....	5.00

L. Vogelstein & Co. moved May 1 from 90 Wall street to 100 Broadway, New York City.

## New York.

NEW YORK, May 1, 1907.

**Pig Iron.**—There have been quite a number of sales and in good sized lots for second and third quarter delivery, and there are good inquiries in the market, among them one lot of 6300 tons. There have also been sales of Basic Pig in this district. On Foundry Irons the tone is firmer, and some of the Southern makers have practically withdrawn. We quote spot Northern Iron \$25.50 to \$26 for No. 1 Foundry, and \$24.25 to \$24.75 for No. 2 Foundry. For the second quarter we quote \$24.50 to \$25 for No. 1 Foundry, \$23.25 to \$23.50 for No. 2 Foundry and \$22.50 to \$23 for No. 2 Plain. No. 2 Southern Foundry is nominally quoted \$26 to \$26.50 for spot and \$22.50 to \$22.75 for the third quarter.

**Steel Rails.**—The railroads are not making haste to engage space for 1908 rollings, and it is probable that the placing of the Pennsylvania order, which has not yet come to the mills, and of the requirements of certain Western roads that usually lead the list on the Illinois Steel Company's books, will constitute the bulk of next year's bookings for some time. The principal business reported in the past week is 46,000 tons for the Savannah, Augusta & Northern,



a new line which will run from Savannah to Chattanooga, with a branch to Augusta. The total mileage will be about 400. Deliveries begin in July and will run into 1908. Export inquiry includes 4000 tons for Mexico, 5000 tons for Argentina, and 1500 to 2000 tons for Cuba.

**Structural Material.**—The situation is improving with the coming on of the season for larger outdoor operations, and the mills have found an increasing demand for shipments on contracts. In April the American Bridge Company booked 50,000 tons, as compared with 42,000 tons in March, and it is estimated that the business taken by other companies brought the April total up to 115,000 or 120,000 tons. Probably 100,000 tons of work has been figured on in recent weeks that is still pending. The railroads are not largely represented in this amount, the Great Northern bridges being about the only business of size that still hangs fire. There is, however, a good volume of general construction work ahead, largely city blocks, and all sections are represented in the list. The American Bridge Company has taken 8500 tons of Steel work for the Carnegie Steel Company's new construction at Duquesne, Pa., and Youngstown, Ohio; 1800 tons for a Philadelphia building for which J. G. Doak is general contractor; 1600 tons for a B. & O. viaduct; 960 tons for a new Scranton, Pa., station for the Lackawanna Railroad; 200 tons for the Pennsylvania Railroad, and 700 tons for New York bridge approach work, under contract to the Carlin Construction Company. The New Haven road received bids on additional street crossing work this week, and the Boston & Albany is about to place a contract for an addition to its Springfield, Mass., shops. We continue to quote for tidewater delivery, mill shipments: Beams, Channels, Angles and Zees, 1.84½¢; Tees, 1.89½¢; Bulb Angles and Deck Beams, 1.99½¢. On Beams 18 to 24 in. and Angles over 6 in. the extra is 0.10¢. Sales are made out of stock of material cut to length at 2¼¢ to 2½¢.

**Bars.**—With a fair demand, prices of Iron and Steel Bars have been maintained at 1.79½¢ to 1.84½¢, tidewater, depending upon the character of specifications, time of delivery, &c.

**Plates.**—Business is confined to small lots, but the aggregate makes quite a satisfactory quantity from day to day. Quotations for tidewater delivery are as follows: Sheared Tank Plates, 1.84½¢ to 1.94½¢; Flange Plates, 1.94½¢ to 2.04½¢; Marine Plates, 2.24½¢ to 2.34½¢; Fire Box Plates, 2.75¢ to 3.50¢, according to specifications.

**Cast Iron Pipe.**—Manufacturers are being favored with a greatly increased inquiry. Those in a position to make fairly early delivery report a multitude of small orders. Few inquiries are now in the market for large lots, but purchases seem to be almost exclusively confined to requirements for extensions. Prices are very strong, with 6 in. quoted at \$37 to \$38 per net ton, tidewater, for delivery beginning in June.

**Old Material.**—Heavy Melting Steel Scrap, Heavy Cast Scrap for foundry use, Stove Plate, Wrought Pipe, Heavy Selected Turnings, No. 1 and No. 2 Busheling Scrap, and Cast Borings are all in good demand, selling quite up to the prices reported during the past few weeks. Some consumers are in urgent need of material, while dealers have by no means covered on their short sales. The situation in No. 1 Yard Wrought has been decidedly changed by the fact that stocks of the less desirable grades have been shipped for melting purposes, and the supply in this vicinity is getting quite low. It is anticipated that by June 1 the local yards will be practically clean of all grades of No. 1 City Wrought. If any change whatever has occurred as compared with the situation last week it is toward better prices and a stronger demand. Leading dealers do not hesitate to express their opinion that the market for Old Material will remain strong for several months. Quotations per gross ton f.o.b. New York are as follows:

Old Girder and T-Rails for Melting.....	\$16.00 to \$16.50
Heavy Melting Steel Scrap.....	16.00 to 16.50
Old Steel Rails, rerolling lengths.....	18.00 to 19.00
Relaying Rails.....	27.00 to 28.00
Old Iron Rails.....	24.00 to 24.50
Standard Hammered Iron Car Axles.....	29.00 to 29.50
Old Steel Car Axles.....	20.50 to 21.00
No. 1 Railroad Wrought.....	18.50 to 19.00
Iron Track Scrap.....	17.50 to 18.00
No. 1 Yard Wrought, long.....	17.50 to 18.00
No. 1 Yard Wrought, short.....	17.00 to 17.50
Wrought Pipe.....	14.50 to 15.00
Light Iron.....	11.00 to 11.50
Cast Borings.....	12.50 to 13.00
Wrought Turnings.....	14.50 to 15.00
Old Car Wheels.....	22.00 to 22.50
No. 1 Heavy Cast, broken up.....	19.00 to 20.00
Stove Plate.....	16.00 to 16.50
Grate Bars.....	14.00 to 14.50
Malleable Cast.....	19.50 to 20.00

Hobson, Houghton & Co., Limited, Frank A. Tasker, general manager for the United States, have removed from 98 John street to 19-21 Cliff street, New York, where they will continue to carry a complete stock of Tool Steel.

Hyde Brothers & Co., Pittsburgh, Pa., dealers in New and Relaying Rails, Splices, Bolts and Spikes, Track Equipment, &c., announce the opening on May 1 of a branch

office in the Washington Life Building, 144 Broadway, New York.

### Iron and Industrial Stocks.

NEW YORK, May 1, 1907.

The course of the stock market during the past week has been rather steadily in the direction of higher values, with special strength shown in the securities of the United States Steel Corporation. This was attributed to the anticipation that the quarterly report to be issued on Tuesday would show excellent earnings. The range of prices on active industrials from Thursday of last week to Tuesday of this week was as follows: United States Steel Common 37 to 38½, preferred 100½ to 102; Car & Foundry common 37½ to 38; Locomotive common 62¼ to 63½; Colorado Fuel 35½ to 36; Pressed Steel common 35½ to 36½; Republic common 28½ to 29½, preferred 85 to 86; Sloss-Sheffield common 53¼ to 55¼; Tennessee Coal 145½ to 147½; Cast Iron Pipe common 37¼ to 37½, preferred 84 to 84½; Can preferred 55½ to 57¼. Last transactions up to 1.30 p.m. to-day are reported at the following prices: United States Steel common 37¾, preferred 101¾; Car & Foundry common 37½, preferred 99½; Locomotive common 63¾, preferred 110; Steel Foundries common 8¼, preferred 39; Colorado Fuel 36; Pressed Steel common 36½, preferred 93½, ex-dividend; Railway Spring common 44; Republic common 28¾, preferred 84½; Sloss-Sheffield common 55½; Tennessee Coal 147¾; Cast Iron Pipe common 37¼, preferred 84¾; Can common 6, preferred 55.

Announcement has been made by the Westinghouse Electric & Mfg. Company that it will issue \$5,000,000 more of assenting stock to stockholders of record May 4. The par value is \$50 a share, and the new stock will be put out at \$75 a share. A statement recently issued by the company shows that in 11 months ended February 28 its net earnings were \$4,453,133 and the net surplus was \$1,292,504. Payments on the \$5,000,000 new stock offered to stockholders are to be made as follows: \$10 per share at subscription, \$10 per share on July 1, August 1, September 3, October 1 and November 1, and \$15 on December 2. Transferable receipts will be issued, exchangeable for stock certificates when subscriptions are fully paid. Stockholders have the right to subscribe for one share of new stock for five shares of existing stock.

**Dividends.**—The United States Steel Corporation has declared the regular quarterly dividend of 1¼ per cent. on the preferred stock, payable May 31, and ½ per cent. on the common stock, payable July 1.

The Pressed Steel Car Company has declared a quarterly dividend of 1¼ per cent. on the preferred stock, payable May 22.

### British Pig Iron in Demand.

Market reports in British iron trade journals refer to the demand which sprang up in April for pig iron for shipment to the United States and Germany. Under date of April 18 the Middlesbrough market letter of the London Iron and Coal Trades Review says that inquiries from the United States in the few days preceding were rather numerous and some of them resulted in fair orders. The iron that is wanted is all for prompt delivery. German buyers were even more pressing than the American. Iron is going steadily out of warrant stores. The condition of the Cleveland pig iron trade in April is reported to have been without parallel. March shipments from that district were the largest on record, but those of April were expected to exceed them by one-third. Never were there so many steamers in the Tees waiting for their cargoes of pig iron. The average daily delivery of pig iron by sea from the Cleveland District had been 5000 tons, but on April 12 17,522 tons was cleared, the largest tonnage ever reported on any one day, the previous largest being on January 25 with 14,874 tons. Up to April 17 the month's exports reached 97,920 tons, as compared with 70,536 tons in March, 69,131 tons in April, 1906, and 45,743 tons in April, 1905, all to the 17th.

HARRISBURG, PA., May 1, 1907.—With the date for the final adjournment of the Pennsylvania Legislature only 15 days away, and with less than a dozen working days, there seems a strong probability that many of the bills which have been exciting public interest will not become laws. Members are commencing to realize that they may do great harm by enactment of hasty legislation.

### Analyses of Lake Superior Iron Ores.

The Lake Superior Iron Ore Association, Rockefeller Building, Cleveland, Ohio, has just issued a booklet giving complete average cargo analyses of Lake Superior iron ores in the season of 1906. In a few instances the expected analyses for the season of 1907 are given. Under the head of Canadian ores the pamphlet has heretofore given the analysis of the Helen ore of the Michipicoten District. In addition to this the Moose Mountain ore in the Sudbury, Ontario, District is now listed, with its expected analysis for the season of 1907—namely, 55.5 per cent. of iron, 0.10 per cent. phosphorus, 13.29 per cent. silica, 1.21 per cent. alumina, 3.60 per cent. lime, 3.15 per cent. magnesia and 0.011 per cent. sulphur. The ore carries 2.60 per cent. moisture. A feature of the analysis list just issued is the addition of 30 ores to the number scheduled in last year's book, while 20 ores for which analyses were given last year do not now appear in the list. Fourteen of the additions are from the Mesaba range. In some instances the mines have ceased to produce. In others merchant properties have passed into the hands of consumers and the ore is not on the market.

Very noticeable is the number of cases in which the iron content of the ores shipped in 1906 or that guaranteed for 1907 is lower than the per cent. of iron given in last year's list. A few conspicuous instances are the following:

Mine.	1906.	1905.	Mine.	1906.	1905.
Atlantic .....	63.01	64.11	Clinton .....	60.50	62.48
Brotherton .....	58.40	60.37	Hemlock .....	52.82	54.48
Cary Empire .....	56.01	58.08	Pewabic .....	61.81	63.85
Hennepin .....	55.36	57.35	Albany .....	57.75	59.25
Newport .....	53.50	56	Beaver .....	61.05	62.30
Sunday Lake .....	59.25	60.80	Bessemer .....	58.76	60.60
Windsor .....	58.06	60.71	Cass .....	56.91	59
Yale .....	61.98	62.90	Higgins .....	59.85	60.94
Abbotsford .....	60.87	62.02	Holland .....	57.63	60.54
Bessie .....	50.19	51.29	Kinney .....	56.70	57.85
Cliffs Shaft,			La Belle .....	56.05	59.17
crushed .....	60.80	62.20	Laura .....	59.20	61.15
Cliffs Shaft,			Lincoln .....	61.74	62.63
lump .....	61.50	63.07	Malta .....	60.46	61.87
			Volunteer .....	54.83	56.05

Among ores listed in the preceding booklet that do not appear in the present one are Beaufort, Foxdale, Hla-watha, Hartford, Longyear, Mansfield, Pillsbury, Sparta, Stephens, Virginia and Wisconsin.

### A 32-in. Heavy New Haven Lathe.

In *The Iron Age*, October 18, 1906, there was described a 36-in. engine lathe, built by the New Haven Mfg. Company, New Haven, Conn., which was the first of a new line of heavy tools brought out by that company. A recent addition to that line is a 32-in. lathe, which is the same in construction and general features as the 36-in. size previously described. The principal differences are in the dimensions. The carriage bridge is 12½ in. wide, the spindle has a 2 11-16-in. hole and a front bearing 5¼ in. in diameter by 9½ in. long. Both front and rear bearings are split taper boxes of a special bronze, and are adjustable by being drawn into the head by square threaded nuts on either end. With this style of box it is an easy matter to keep the bearings in proper adjustment and the spindle in perfect alignment. The triple back gears give ratios of 8 to 1 and 50 to 1. The lathes can be furnished in bed lengths of from 14 to 36 ft.

The Latshaw Pressed Steel & Pulley Company, Pittsburgh, has made arrangements with the V. Jeffrey Mfg. Company, Montreal, Canada, by which the latter will carry a complete stock of Latshaw pulleys to serve the trade in Eastern Canada.

J. H. Lang, for a number of years manager of the metal department of the National Lead Company, on May 1 associated himself with the metal house of L. Vogelstein & Co., New York.

### Labor Issues in the Foundry Trade.

The wage rate in union foundries in St. Louis since 1903 has been \$3 for floor molders, \$2.90 for bench molders and \$2.90 for coremakers. In February of this year the union asked for an increase of 25 cents a day in all these rates. Recently the proprietors offered an advance of 15 cents a day, and after some conferences this has been accepted. No agreement was signed with the union, and there is no stipulation as to minimum rates or union shop committees.

Union coremakers in Quincy, Ill., on March 15 demanded a 10 per cent. increase in the wage rate of \$2.50. The proprietors granted this advance, effective April 1, and it was accepted in all but one foundry. In this case the union demanded that the coreroom be organized and conducted according to union rules as to apprentices. This was refused and the union men went out. They have since been ordered back to work by a national officer of the union, and under the conditions existing when they struck. The union refused to arbitrate questions of organizing the coreroom and of limiting the number of apprentices.

In March the molders of Indianapolis demanded a reduction in hours of labor from 10 to 9. Instead they have now accepted an advance of 15 cents a day. The minimum rates recognized by union foundries are now \$3.25 for floor molders, \$3.05 for bench molders and \$2.75 for coremakers.

At Montreal, Quebec, union molders presented a demand in March for an advance from \$2.55 to \$3 a day. A compromise has been agreed upon at \$2.75 from May 1 for molders and \$2.40 for coremakers. No written agreements were made.

Twenty-two molders struck at the foundry of the Herendeen Mfg. Company, Geneva, N. Y., on April 9 against making castings for the New York Central Iron Works of the same city, in whose foundry a strike has been declared. The Herendeen Company is now educating an entirely new force of molders and will run an open shop.

The Frank Prox Company, Terre Haute, Ind., recently installed molding machines in its foundry. The Molders' Union demanded that these be put under the control of union operators and went on a strike. The company is now bringing in a new force of men, both for machine and floor work.

Molders and coremakers in the employ of the Allis-Chalmers-Bullock Company, Montreal, Quebec, to the number of about 60 went out on a strike on March 22 because the company proposed to employ unskilled labor on molding machines. The shops are now operating with independent workmen.

### Labor Notes.

The Cleveland branch of the National Metal Trades Association has moved its quarters in the New England Building to adjoining rooms that will give the organization twice the amount of space it formerly had. The branch, in carrying out the action decided upon at its recent annual meeting, has taken in the territory within a radius of 70 miles of Cleveland, and including a number of thriving manufacturing cities. This addition gives the organization eight members outside of the city who had previously been members of the National Association. In addition, the association has recently taken in four new local members.

Considerable scarcity of men is reported at puddle mills and nail works in the Susquehanna Valley, Pennsylvania.

The No. 3 furnace of the Lackawanna Steel Company, which went out for relining on April 1, was blown in on April 27 and made a cast on April 28, making 28 days from pig iron to pig iron. While out the furnace was equipped with a McKee top. The No. 1 furnace of the company, which was relined in early March, was kept out for that purpose but 19 days.



## The Machinery Trade.

NEW YORK, May 1, 1907.

Dealers and manufacturers report a steady demand for machinery, with but little change in the volume of orders and inquiries received, which generally cover small and medium sized lots of tools. No large inquiries were reported the past week. The railroads have been buying in a small way, and some of them have come into the market for a few machines, notably the Baltimore & Ohio Railroad, which has not only been purchasing machinery, but has inquiries out for a few large machines. The Baltimore & Ohio Southwestern, Pennsylvania, Illinois Central and Grank Trunk railroads have within the past few days placed orders for some machinery, the last named road buying against the list printed in these columns a week or two ago. A project of interest to the trade is the decision on the part of those affiliated with the Standard Chain Company to build a plant at Walkersville, Ont.

These prosperous times have their drawback, and this is apparent with the second-hand machinery trade. A prominent dealer in that line complained last week that the second-hand market seems to be pretty well bought up, and in some classes of machine tool equipment it is impossible to supply the demand. In consequence the second-hand machinery dealers who have been remarkably busy for a year past find themselves obliged, in frequent cases, to turn away business because they cannot get the needed equipment. Prices of such machinery as is offered continue high, and there is strong competition on the part of second-hand men to buy discarded machinery for resale.

The demand for steel castings has fallen off to some extent, and manufacturers in that line, who a month ago were trying to hold off orders wherever possible without losing customers, because the shops were crowded with work, are now seeking trade, for while shops are as a rule filled up with work for the immediate future it is apparent that there is no such a preponderance of future business as there was eight weeks or so ago. In cases where manufacturers make some lines of machinery in addition to castings for the trade this let-up is not altogether objectionable, as it gives them a chance to make up machinery parts for which, as was mentioned here last week, there is a strong demand.

### The Proposed Machinery Club.

At a meeting of the general committee appointed to form a club among the representatives of the machinery and metal trades in New York, held recently in the office of the Watson-Stillman Company, the following were elected as the first Board of Governors of the proposed club: F. H. Stillman, Watson-Stillman Company; E. H. Wells, Babcock & Wilcox Company; Thornton N. Motley, T. N. Motley & Co.; R. C. McKinney, Niles-Bement-Pond Company; W. H. Marshall, American Locomotive Company; George A. Post, Standard Copper Company; Walter L. Pierce, Lidgerwood Mfg. Company; John W. Dunn, International Pump Company; W. L. Saunders, Ingersoll-Rand Company; O. C. Gayley, Pressed Steel Car Company; Charles A. Moore, Manning, Maxwell & Moore; J. W. Duntley, Chicago Pneumatic Tool Company; Arthur L. Merriam, Ames Iron Works; A. B. See, A. B. See Electric Company; John R. McGinley, Duff Mfg. Company; James B. Brady, Standard Steel Car Company; Otis H. Cutler, American Brake Shoe & Foundry Company; Archibald Johnston, Bethlehem Steel Company; Foster Milliken, Milliken Brothers; Henry Prentiss, Prentiss Tool & Supply Company.

J. R. Vandyck of the Vandyck-Churchill Company, chairman of the By-Laws Committee appointed at a previous meeting, submitted a set of by-laws in behalf of his committee, which was accepted with some slight changes, and it was decided to name the new organization The Machinery Club. The general committee authorized the Incorporation Committee to proceed with the incorporation of the club. The meeting was adjourned to convene again at the call of the chair.

### General Electric Company's Machinery Requirements.

The most important development reported in the trade the past week was the medium sized list of tools sent out by the General Electric Company to be delivered at Schenectady, N. Y. The list calls for a miscellaneous lot of tools, which are probably intended for completing the equipment of shops for which most of the machinery has been purchased, rather than for the equipment of the new buildings which are being erected. This company has very largely increased its shop facilities during the past year and undoubtedly will require a great deal of machinery additional to that already purchased, especially if it intends to proceed with the construction of its proposed shops at Erie, Pa. The company is preparing plans for a new factory to be built at Eighteenth avenue and Lillie street, Newark, N. J. The plant, it is understood, will be used for the manufacture of incan-

descent lamps. The company has notified the Building Department of that city that plans for the proposed structure will be filed in a short time, and from all accounts the machinery has not been purchased as yet.

The repair shops of the New York Central & Hudson River Railroad in the Melrose yards, near 156th street, New York, were burned to the ground on April 23, and the company is planning to rebuild them at once. All of the machinery equipment in the shops, including the power plant, a large quantity of machine tools, woodworking machinery and foundry equipment was ruined. Machinery will be purchased very shortly to replace that destroyed, and it is probable that the trade will soon hear of requirements in that line. The plans for the new structure have not been completed as yet, but it is understood that the shops will be rebuilt on a larger scale.

To carry on the construction of the Michigan Central Railroad tunnel, under the Detroit River, the Detroit Tunnel Company has given a blanket mortgage on its property. In view of the fact that the contract has not yet been let for the power equipment for operating the tunnel, this filing of a mortgage is interesting in that it indicates that contracts will be let shortly for the equipment. The contract for the construction of the tunnel was awarded many months ago, and work of construction is under way.

The Pennsylvania Railroad Company has made no inquiries or notable purchases through its purchasing department during the past few weeks. The usual list of current material is being purchased to supply the shops, among which is the material for the construction of two new steel passenger cars, which will be built at Altoona. The list of machine tools has not yet been issued, with the exception of one division, the list of tools and machinery for which was printed a few weeks ago. Bids upon this list are nearly all in.

The Mora Motor Car Company, whose offices are in Rochester, N. Y., intends to enlarge its works at Newark, N. Y. A two-story building of mill construction will be erected which will have over 100,000 sq. ft. of floor space. The company has not yet determined what additional machinery will be required for equipping the new building, but it states that the requirements will be in the way of lighter machinery adapted for making automobile parts.

John H. Murphy, manufacturer of sugar machinery, 633 Magazine street, New Orleans, La., who is largely increasing his facilities, is not in the market at present for any machine tool equipment, with the exception of a traveling crane.

Some machinery will probably be purchased by the Johnston Harvester Company, Batavia, N. Y., for equipping its proposed malleable iron plant. A tract of land, 200 x 800 ft. opposite the present plant has been purchased upon which the malleable plant will be erected as soon as plans can be prepared. The new buildings will be of steel and concrete. No power equipment will be required, as a new power plant was installed about three years ago, and provision was made at that time for this extension.

The American Smelting & Refining Company has been purchasing equipment of late for its plant at Perth Amboy, N. J., where an addition was completed a short time ago. The company has bought some large blowing engines and conveying equipment, and it is understood that there are some inquiries in the trade for other requirements in the power line for the plant.

The Royal Typewriter Company, 253 Broadway, New York, which now has a large plant in Brooklyn, is looking about for a site for another plant, and the company's officers are considering a proposition to locate at Hartford, Conn., which is already an important center of the typewriter manufacturing industry. It is stated that the company intends to build a plant somewhere during the summer, but plans have not been completed as yet, and it will be a month or more before a location is fully decided upon. No equipment has been purchased as yet.

It is probable that the trade will soon hear of requirements for a large water power plant, to be erected at Fish Dam on the Holston River, 10 miles from Bristol, Tenn., by Charles Hansel & Co., engineers, 43 Exchange place, New York. A company is being organized by Theodore Swan of Bristol, Tenn., to develop about 4000 hp., and distribute it for light and power purposes. As yet none of the machinery has been purchased, and while the scheme has not entirely matured it is stated that there is little doubt but that it will go through.

### Business Changes.

It is moving time in the trade, and many firms along Cortland, Dey and Liberty streets are changing their locations. The big West Street Building, where many machinery houses have made their headquarters, is the scene of activity, and the same description applies to the Singer Building and other large office structures in the machinery district. It will be another week before many of the firms will be settled.

The A. D. Granger Company, New York, announces the removal of its offices to Rooms 1518-1520 West Street Build-

ing, 90 West street, where it has much larger and more commodious offices, arranged for the better conduct of its business. The company handles the products of the Skinner Engine Company, Erie, Pa.; Oswego Boiler & Engine Company, Oswego, N. Y.; Harrisburg Mfg. & Boiler Company, Harrisburg, Pa.; Union Iron Works, Erie, Pa.; Bates Machine Company, Joliet, Ill., and the Frost Mfg. Company, Galesburg, Ill.

Rossiter, MacGovern & Co., New York, have moved their offices from 17 Battery place to 90 West street.

Chambers & Hone, consulting engineers, New York, have moved their office from 60 New street to 15 William street.

## New England Machinery Market.

WORCESTER, MASS., April 30, 1907.

April is closing as a month entirely satisfactory to the dealers of Boston and other New England cities in the volume of business that has been transacted. In almost all instances the comparison with previous months of 1907 has been favorable, and there is no marked difference as compared with some of the months of 1906. Few complaints of existing conditions are heard, and whatever dissatisfaction prevails is due to loss of business resulting from inability to secure machinery for customers for a reasonable date of delivery. Probably fewer orders for delivery far ahead are being booked, though this should not be construed as meaning a radical change in this respect. Many orders are being placed for machinery that cannot be shipped to customers until 1908. One of the large milling machine companies outside of New England has sold the entire output of its works for delivery from January to July of next year, and similar conditions exist with most lines and sizes of this type of machine, as well as gear cutters and some of the automatic and grinding machines. But on the whole more conservatism is shown in placing orders for machinery that cannot be delivered before early autumn.

A sign of the times is the action of one of the New England lathe builders in announcing a very sharp advance in prices, which goes into effect immediately. The company has not been acting in unison with the general trade in fixing prices, and its total of advances in the past 18 months has probably been somewhat less than those of most other lathe builders. But nevertheless so radical an advance as 12 to 15 per cent. on certain tools, and of practically 50 per cent. on machinery which has been redesigned and given the latest improvements, shows a strong confidence in the market, which every machine tool man seems to share.

There is absolutely nothing fictitious in the talk concerning favorable business conditions. Certain buyers have accused the trade of talking too optimistically, with the intention of artificially maintaining demand and prices. But the accusation is ill founded. The machine tool builders in all parts of New England agree absolutely with the expressed views of the dealers, and most users of machine tools—in fact all of those who have been questioned by the writer—assert that apparently there is practically the same need of new equipment as there was before the new year.

Several sizable lots of tools have been figured on by the Boston dealers during the past week, and the demand for single tools and small lots continues. The same eagerness is shown in securing second-hand machines, if they can be obtained for immediate shipment. There is no cessation of the dealers' plaint that if they could only get the machines from the manufacturers their records of sales would go all to pieces. Many orders have been refused during the week because they could not be filled quick enough to satisfy would be buyers.

The manufacturers of motor boats and combustion engines for their multitudinous purposes, apart from automobiles, have become no mean factor in the machine tool market in New England, where there are many establishments of the sort. Their aggregate yearly requirements constitute a really large figure, and the demand is a growing one, as new works are established and old plants expanded. At the present time they are buying a few tools, though they do most of their purchasing in the fall and winter. They are making some inquiries with a view to placing orders for additions to equipment next season. Some dealers have begun to specialize on this trade and in that other growing new field, the garage trade, and have found it very profitable.

New England is singularly free from labor troubles, probably more so than has been the case for years. A few isolated instances of petty strikes are reported. Local troubles have been threatened in a few cases, but it is thought that they will amount to little. The usual ultimatums which name May 1 as their day of final action are rare. This is true not only of the metal lines of manufacture, but also in the building trades. It looks as if the year would

pass in a most harmonious relation of employer and employee, a condition which would be most natural, for employees are working steadily at good wages. Announcements of shorter hours, voluntarily extended by manufacturers, are being made in some localities, usually accompanied by the statement that questions of wages under the new schedules will be determined by negotiations with the men as individuals.

The Massachusetts Steel Casting Company, Everett, Mass., has been incorporated in Massachusetts to take over the business of the Maine corporation of the same name. The foundry, which manufactures steel castings, has been in operation for some years, and is well known. Under the present management it has been operated with much success, and has established an excellent reputation in the trade. The change in corporate existence means a change in ownership, it is understood, though the *personnel* of the officers as named in the charter does not indicate much as to management, as they are all lawyers. Ripley L. Dana is president, Arthur F. Johnson treasurer and Henry F. Knight clerk, the address of the three being 50 State street, Boston. While no statement as to ownership is made, it is understood in the trade that the purchasers are General Electric interests. That company uses a large amount of steel castings at its Lynn, Mass., works, which are not far distant from the Everett plant.

The Boston Gear Works, Norfolk Downs, Mass., manufacturer of all kinds of gears, is to extend its works by the erection of a new building, 40 x 100 ft., and one story, to be devoted to manufacturing purposes. New machinery will be required. Some tools have already been ordered, and others are under consideration, but no decision has been reached as to most of the list; and, in fact, it is not yet determined just what will be needed to complete the equipment. The company has found its business outgrowing the present quarters, and it was necessary to build. The new building will provide room for some growth in the future, as well as a relief from present congested conditions.

The American Miniature Railway Company, Bridgeport, Conn., is fitting up a plant for the manufacture of the product as indicated in the name, at 37 East Washington street. It is a Connecticut corporation, with a capital stock of \$40,000. William J. Nichols is the president and H. E. French secretary and treasurer. Mr. French was until recently secretary of the Acme Shear Company, Bridgeport.

The Consolidated Carpet Sewing Machine Company, Bridgeport, Conn., is moving its plant from Water street to more commodious quarters at the corner of Broad and John streets. It is probable that the company will add a new line to its products.

The Warren Steam Pump Company, Warren, Mass., manufacturer of power pumping machinery, is to double the capacity of its works. The stockholders have voted to issue bonds to the amount of \$100,000, the proceeds of which will be devoted to enlarging the business. Work will begin immediately upon an extension of the plant, 85 x 180 ft., which practically doubles manufacturing space, an increase made necessary by the rapid growth of the business. A large amount of new machinery will be installed. Some orders have already been placed and bids for other tools are under consideration, but no final decision has been reached with a considerable number of machines. Warren, located on the line of the Boston & Albany Railroad, between Worcester and Springfield, has been a steam pump town for many years, for it was the home of the Knowles Pump Works before the consolidation of that company with the George F. Blake Mfg. Company some years ago. Many of the workmen of the old company have returned to the town to enter the employ of the more recently established business. The company has been awarded the contract for four powerful air pumps and jet condensers by Stone & Webster, Boston, for installation in power plants of the Boston Elevated Railway Company, two at the Lincoln Wharf station, and one each at the Charlestown and Cambridge stations. Each will handle the condensation of from 2500 to 4200 hp. The contract also carries with it 12 center packed pop valve duplex boiler feed pumps, the combined capacity of which will take care of from 17,000 to 18,000 hp.

The Fuller Mfg. Company, Brooklyn, manufacturer of bookbinders' and printers' machinery, has purchased the large plant at New Haven, Conn., formerly occupied by the Housatonic Mfg. Company, and will remove its business to that city. The plant is being remodeled for its new purposes. The business has grown to such proportions that it has become necessary to seek larger quarters.

The Universal Company, Hartford, Conn., has been organized to handle in foreign countries patents held by the Universal Machine Screw Company of that city, manufacturer of multi-spindle screw machines. Charles E. Bond, Hartford, is the president of the new company; George E. Sykes, Rockville, Conn., secretary and treasurer, and the Board of Directors comprises Mr. Bond, Mr. Sykes, F. A. Betts, C. J. Roach, R. Hakewessell and C. M. Spencer, all of Hartford, and Charles Phelps of Rockville.

The Bridgeport Forge Company, Bridgeport, Conn., manufacturer of wrought iron and steel forgings, has in-



creased its capital stock from \$150,000 to \$200,000. A large part of the increase will be put into new equipment, the company states.

The International Oil Engine Company has acquired the plant recently erected at Danielson, Conn., by the Industrial Mfg. Company, and proposes to concentrate its manufacturing at that place. Five acres of additional land has been acquired, upon which it is planned to erect additional buildings in the future. The company manufactures the kerosene combustion engine formerly built by the International Power Vehicle Company, Stamford, Conn., and more recently by the Corwin Mfg. Company, Peabody, Mass.

The New Haven Clock Company, New Haven, Conn., is to erect an addition to its works, 36 x 73 ft., and four stories. It will be an extension of the building occupied by the watch department, additional manufacturing facilities for which are needed.

The Jacobs Mfg. Company, Hartford, Conn., announces an increase in the list price of its No. 4 chuck from \$15 to \$18. The company is running its factory five nights a week in the endeavor to promptly supply the demand for its improved drill chucks.

The Phelps Publishing Company, Springfield, Mass., is about to erect a large building for light manufacturing purposes and offices, especially for its printing and publishing business and tenants in the printing, paper and allied trades. The structure will be of reinforced concrete, eight stories and basement, 105 x 285 ft., and will replace a burned building. The company is making a special study of the problems of heat, light, power, ventilation and sanitation. The power plant will be of about 1000 hp., with room to increase to 1500. The comparative merits of gas engines and steam turbines, and the standard forms of steam boilers and engines, are receiving much attention.

The business of the J. A. Stowell Company, Leominster, Mass., machinist and dealer in machinery, has been incorporated under Massachusetts laws. J. A. Stowell is president. A. W. Stowell treasurer, and Frank Barter clerk. No change in management has been made, and no additional equipment is required for the present.

### Cleveland Machinery Market.

CLEVELAND, OHIO, April 30, 1907.

The local machinery market continues in a very satisfactory condition except in the matter of deliveries, which show no improvement. Dealers in machine tools declare that the volume of business entered on their books the past month is fully as large as during the previous months of the year. Many inquiries are still coming in, and there are no indications of a less active demand for tools in the near future. While some industrial companies are not buying tools that they would buy if they could get deliveries within a reasonable time, others are so confident that the present prosperity of the country will keep up that they are placing orders for machine tools for delivery a year from now. The buying is still confined largely to small orders for one or two tools for additional shop equipment, but there are several inquiries in the local market for full equipment for projected industrial plants which have not yet reached the incorporation stage. If all the projects now under consideration are launched it will mean the purchase of machine tool equipment to the amount of about \$150,000. Second-hand tools are scarcer than ever, and when any can be had they bring fancy prices.

Local manufacturers of cranes, hoists and general machinery report that there is no falling off in orders, and nearly all the plants have enough work on hand to keep them busy for several months ahead.

The Union Steel Screw Company has just bought a site for a large addition to its plant on Payne avenue, upon which it will erect a four or five story building, about 100 x 250 ft. The company needs the additional room to increase its rivet and bolt departments, which were added during the past year, and also to provide for a larger output of screws. The company will manufacture the most of the special machines needed for its enlarged plant, but it will be in the market for a number of machine tools for additional machine shop equipment, and also probably for additional power equipment.

The Adjustable Collet Company, recently organized, with a capital stock of \$10,000, for the manufacture of automatic collet attachments and adjustable spring collets, has commenced business at 224 High avenue, occupying the part of the block recently used by the P. A. Geier Company. The company has put in all the machine tool equipment needed for the present, but may decide to enlarge the capacity of its plant in the near future. It reports that it has already received a large number of orders. F. J. Ellsworth, formerly connected with the Borden Company, Warren, Ohio, is president and general manager, and Joseph L. Holstein, superintendent.

The McMyler Mfg. Company has decided to enlarge its plant at Warren, Ohio, by the erection of a foundry, the building to be of structural steel and iron, 100 x 100 ft., and up to date in every particular. The company has been making its castings at its Cleveland plant, but the growth of the business has necessitated a larger foundry and the new addition will double the present capacity for turning out castings. All the equipment has been ordered. It will continue to operate its foundry in Cleveland. The company has under consideration the erection of a new machine shop, but this addition will not be made this year.

The Seneca Chain Company, with plants at Kent and Zanesville, Ohio, has decided to move its latter plant to Mansfield, Ohio, having just closed a contract with the Mansfield Chamber of Commerce for the removal to that city. The erection of the new plant will be started at once, and it is expected that it will be in operation before July 1. The buildings will be erected on a 6-acre site and will be composed at the start of a main building, 60 x 160 ft., and two forge shops, each 40 x 228 ft. The plant will be erected with the view to future extensions. The cost of the Mansfield plant, including buildings, machinery and forges, will aggregate about \$80,000. The plant will begin operations with 120 forges and 250 employees. At a recent meeting of the stockholders of the Seneca Chain Company it was decided to increase the capital stock from \$200,000 to \$300,000, one-half the increased capital to be offered for sale.

Having outgrown its present plant, the Morgan Engineering Company is looking for a new site and may decide to move its plant from Alliance, Ohio, to a larger city where the railroad facilities are better. Propositions from several cities have been received, but Canton, Ohio, seems to be favored. The company wants from 50 to 75 acres, and if the removal is definitely decided upon the present works will be gradually dismantled and removed to the new location. The company plans first to erect a structural plant about 125 x 380 ft., and this would be used in the erection of the other departments. The business men of Alliance are making strong efforts to induce the company to remain in that city.

The J. D. Smith Foundry Supply Company has purchased the old Variety Iron Works, adjoining its plant, which will give it 45,000 sq. ft. of additional floor space. The greater part of the building will be used as a machine shop. The company expects to be in the market before long for some additional machine shop equipment. The company has recently taken the selling agency for the United States for the Fisher side blow steel converter.

The Warren Electric Company, Sandusky, Ohio, is in the market for about \$8000 worth of machine tools, including a boring mill, radial drill, grinder, 35-in. lathe and a shaper. The company may also decide to buy a large gas engine in the near future.

The Zeman Iron Works Company, Cleveland, Ohio, has just moved into its new plant at 6824 Union street, where it has installed a new wire machine, 35-hp. engine and a new drill press. The new building is 92 x 120 ft., one story, and has double the capacity of the old one. The new site is on the line of the Wheeling & Lake Erie Railroad.

The Balkwill Pattern Works will be located in its new plant, 1444 East Forty-ninth street, N. E., after June 1. The building now being erected will give the company three times its present floor space and will allow it to handle patterns of any size.

The Broc Carriage & Wagon Company will soon begin the erection of an addition to its factory at 1667 East Fortieth street, 40 x 100 ft., three stories. The company expects to purchase a lathe and drill, and perhaps some other machine tool equipment.

The Kanneberg Roofing & Ceiling Company, Canton, Ohio, which was recently reorganized, will erect a new and larger plant within the next few months, being forced to vacate its present quarters on December 1. The company has completed its organization by the election of Harry S. Renkert, president; John Brobst, first vice-president; C. M. Kanneberg, second vice-president, and Clarence Weirick, secretary, treasurer and manager.

W. H. Welch, 723 Williamson Building, has been appointed Cleveland agent of the Pittsburgh Automatic Vise & Tool Company, Pittsburgh, Pa.

The Burke Machinery Company, Cleveland, Ohio, has sent out under date of May 1 a revised price-list, which not only covers the company's complete line of up to date tools, but also several additions to its former line, including a two-spindle milling machine, knockouts for its Nos. 2 and 4 milling machines, slotting attachment for these machines, No. C tapper, which will tap up to 3/4 in.; countershaft for this tapper, and countershaft for the company's No. 2 or D tapper. The company has changed its Nos. 1, 1 1/2 and 2 tappers to Nos. A, B and D, inserting the No. C as an intermediate size. The new price of \$30 on index centers will go into effect May 15. The No. 2 milling machine is especially designed for typewriter and similar work, and delivery of these machines can be made within 30 days from receipt of order. Owing to its increased facilities the company is

now able to make delivery of its milling machines within one week from receipt of order. On account of the large increase of business on small machine tools and the desire to continue this line alone, the company has decided not to undertake the manufacture of the surface grinder, for which it has patterns and one machine partly finished, which it will sell for the price of the patterns. Some time ago patterns, special tools and parts for the manufacture of the B C metal saw, formerly made by the Baker-Resek Company of Cleveland, were purchased. This outfit is for sale.

## Philadelphia Machinery Market.

PHILADELPHIA, PA., April 30, 1907.

There has been more activity in the local machinery market during the past week, and several small lots of tools which have been under consideration for some little time were closed. A few good specifications have also developed and the trade generally is pretty well satisfied with existing conditions. The volume of business taken during the month of April has been greater than that of the previous month, and we are informed by quite a number in the trade that the aggregate business done during the first four months of the year compares very favorably with that done during the same period last year. By far the greater portion of the business placed has been for single tools, the best demand being for those of the larger sizes, which are the hardest to get. Medium sized tools have not sold as well, and on some lines deliveries could be had fairly promptly. Manufacturers are beginning to make deliveries on stock orders which were placed by dealers some months ago, and as a consequence merchant floors are filling up quite extensively in some cases. This condition has no doubt helped recent sales, as it has enabled prompt delivery to be made, which is still a very important feature in almost every transaction. Deliveries on the whole appear to be a trifle easier, the recent lull in buying having enabled some manufacturers to make progress in catching up with the business on their books to some little extent.

Manufacturers nevertheless continue fully occupied, and while deliveries on some sizes have improved, those on others are as bad as ever. Order books are well filled and insure the full operation of plants for months ahead. As a rule the business coming in, while made up of a number of orders for single tools and small lots, aggregates pretty closely the productive capacity, although there is a little feeling of uncertainty as to the continuation of the same large volume of business in some lines during the second half of the year.

The labor situation, which is usually an important matter at this time of the year, is generally satisfactory. There are no disturbances of any moment as far as machine shop and foundry labor are concerned, although in the building trades there will probably be several strikes, which, however, will not interfere with the machinery trades unless long delayed in settlement, and then only indirectly.

Considerable new business is before the trade. Several of the larger propositions which have been under consideration for some time still remain unclosed. The several railroad lists which have been bid upon recently remain unclosed, and very little business has come from any of the railroads on either new or old specifications.

There has been no change in the foreign demand. Practically nothing has been taken in the standard line of machine tools, although some fair business continues to be done in special tools and power transmission equipment.

The demand for second-hand machine tools is as active as ever. The inquiry for heavy tools is particularly good, and some very satisfactory sales of this class of machinery have been made. The medium and lighter tools are in good supply, but the demand does not seem as great as for the heavier types of tools.

Boiler and engine builders, as well as dealers, report a better demand, and sales have consequently improved. The greater portion of the business has been in those of the larger capacities, although there is a better demand also for the medium powers. In the smaller types not a great volume of business has developed, owing principally to the encroachment of the gas and gasoline engine.

The foundry situation is good. A large tonnage continues to be offered in steel and gray iron castings, and foundrymen as a rule have the full capacities of their plants covered. In some lines there is a slight improvement in deliveries, although machinery castings as a rule are still hard to get promptly.

The Hartz Machinery Company, which recently purchased the local interests of the Wolfe Company, and which was formerly located at Twenty-third and Hamilton streets, has removed to 605-607 Arch street, where it will continue to conduct the business of general machinery, and will work particularly in connection with flour mill machinery and supplies.

The Atlantic Refining Company has begun work on a four-story factory, 56 x 129 ft., and a dry kiln, 28 x 78 ft., at its Point Breeze Works, Thirty-sixth and Shunk streets. The new factory will be used for the manufacture of several of its by-products.

Barwood & Snider, machinery merchants on the Bourse machinery floor, have taken the exclusive agency in the Philadelphia territory for the line of Pittsburgh vises manufactured by the Pittsburgh Automatic Vise & Tool Company, Pittsburgh, Pa. Barwood & Snider report business in their lines to be in very satisfactory shape, particularly as to sales of small tools and specialties.

The Superintendent of Supplies, Board of Education of the city of Philadelphia, received bids to-day for the equipment of the new Southern Manual Training School at Broad and Jackson streets. The schedule of proposals includes some 1300 different items, covering machinery, cabinets, tools, hardware, plumbing, shop equipment and metal work. The proposals submitted numbered 25, which have been ordered scheduled. It is hoped that the equipment will be installed before September 1.

The Philadelphia & Reading Railroad and the city authorities are moving rapidly in the preliminary work necessary in connection with the elevation of the former's surface tracks. It is said that there will be no delay in starting actual work. Engineering headquarters have been established at Broad and Huntingdon streets, where actual operations will be started, although work will be carried on simultaneously at several points. The railroad company has sent out notices closing the Huntingdon and the Berks street freight stations after June 1. Specifications are being prepared for the work, and it is stated that bids will be advertised for at an early date.

The Philadelphia Roll & Machine Company is busier than ever. This company, which melted an average of slightly over 1,000,000 lb. of iron, almost entirely charcoal, per week last year, is now averaging 1,250,000 lb. per week. Business in sand cast and chilled rolls for rail, merchant and structural mill work has been extremely large, particularly those of heavy individual weight, while orders for heavy equipment, large engine beds and heavy machinery equipment have also been booked. Deliveries recently have been large, the heaviest tonnage, however, being in rolls.

The E. H. Mumford Company, manufacturer of foundry molding machines, notes an increasing business. Inquiries and orders have been numerous from New England, the Middle West and the local territory. Inquiries for Pridmore machines, particularly those of the rockover drop type, have been very satisfactory, and a number of sales have been made. Plain power ramming and power ramming split pattern machines have also been in good demand, and deliveries during the past month have been very large, particularly on molding machines for gray iron, malleable and brass castings.

Hill, Clarke & Co., Incorporated, Boston, have taken a lease of the store at 512 Arch street, Philadelphia, in the building of the Drug Club of Philadelphia. The new quarters include the first floor and basement of the building, and will provide ample space for the company's needs. The present quarters in the Bourse will be vacated June 1.

## Cincinnati Machinery Market.

CINCINNATI, OHIO, April 30, 1907.

Machine tool builders, without exception, continue to be crowded with work, and are making most strenuous efforts to have the current output of each day equal as nearly as possible the influx of new orders constantly coming in. From six months to a year appears to be the average of bookings ahead, although exceptional cases are noted, where August a year hence is said to be as early as definite promises can be made for delivery of certain tools.

Germany, England and France, as well as the northern countries of Continental Europe, have become good markets for American tools, and are now sending in orders quite generally. Trade with Japan, especially along special lines of tools, is also quite active, and one or two of the shops in this locality have considerable business booked ahead for shipment to that country. American trade with Australia, which has heretofore been quite light, and conducted mainly through the medium of commission houses, is undergoing some change, and manufacturers are now going after the business direct, with results that are apparently very satisfactory. Shipments are being made to the Philippine Islands for government use, and foreign trade generally is quite strong and active. A number of large consignments of tools have been forwarded to San Francisco within the past 30 days, a portion of which are said to have been for export, the remainder to replace those that were damaged or destroyed by the fire.

With reports from all the large iron centers showing the iron market in a strong condition, railroads purchasing heavy lines of equipment and heavy tonnage of rails, and the outlook from the crop district good, manufacturers are unable



to see anything but a bright future ahead, at least for the remainder of the calendar year. Prices which have obtained on the various lines of tools for the past three or four months are said to be unchanged, with no indications of any advance in the near future.

The Lodge & Shipley Machine Tool Company has been seriously delayed in the work of building its extension by the wet weather. A large amount of earth has to be removed and considerable grading done for the locating of the additional buildings. The new power house is now in course of erection, and the engine and generator is on the ground ready for installing as soon as completed. Quite a number of the new tools have already been received and installed, thereby largely increasing the output of the former plant.

The Hisey Wolf Machine Company has a gang of men demolishing the old buildings that now occupy the site on which the new plant will be erected at Cornany and Township streets. The building will be L shaped, 35 x 100 ft. in rear, with main building 45 x 145 ft., two stories high. In addition to this will be a separate office building, 20 x 65 ft., two stories, which will contain all modern conveniences. This will give it about three times the floor space of the present plant, or in the neighborhood of 20,000 sq. ft. of room. Occupancy is expected not later than October 1. Considerable new machinery will be required along the line of special tools, which will be added as soon as possible.

The Cincinnati Shaper Company has let contracts for its new 100-ft. extension to the main shop, which will practically then be 90 x 400 ft. A new power plant, as well as a number of new tools, are being installed, the contracts for which are said to have been already made. The extension, it is said, will be ready about October 1.

The John Steptoe Shaper Company has been adding a number of lathes, planers and drills to its equipment, so that the capacity of the shop has been more than doubled. Fully one-third of the trade is said to be for export, and is widely scattered throughout Europe and Asia. The company is about eight months behind on its orders, with inquiries strong.

The Cincinnati Machine Tool Company has recently installed a Gleason gear cutter, Warner & Swasey hollow hexagon turret lathe, Lodge & Shipley, three Bradford, one Von Wyck, one Graves & Klusman, and one Le Blond lathes and a small milling machine. The output is practically sold for the entire year. The floor space now utilized by the Triumph Mfg. Company on the second floor of the plant will be taken over as soon as practicable, which will give additional floor space of 60 x 180 ft. The company will then bring out several additional sizes of drills which are now under construction. W. H. Shafer, formerly connected with the Ahrens Fire Engine Company, this city, has become associated with the Cincinnati Machine Tool Company in the capacity of mechanical engineer.

The Triumph Mfg. Company has added a B. & S. gear cutter, Cincinnati planer, Bullard boring mill and Le Blond lathe, which will be installed as soon as its new plant at Spring Grove avenue and Sassafras street is ready for occupancy. This building will be of brick construction, two stories high, 20 x 60 ft., with a separate office building. The contracts have all been let, and work will be hurried forward so that the plant can be placed in operation by September 1.

F. L. Zimmerman, president of Zimmerman, Wells, Brown Company of Portland, Ore., dealer in machinery, boilers and engines, was in the city during the week to secure machinery.

The Thompson Grinder Company, Springfield, Ohio, last week increased its capital stock from \$10,000 to \$25,000.

The Union Fork & Tool Company, Columbus, Ohio, which recently assumed control of the United States Hoe & Tool Company, Columbus, and the Continental Tool Company, Frankfort, Ky., has opened an office on the fifth floor of the Union National Bank Building. The office will be in charge of G. W. Durel, general manager.

The entire plant of the Indianapolis Switch & Frog Company, Springfield, Ohio, was totally destroyed by fire April 23. The building was of brick, one story, and covered a floor space equal to 3 acres. The company, having a number of very large contracts unfinished on its books, will at once make arrangements for the completion of these contracts as well as the replacement of orders under way when the fire occurred. The loss of machinery equipment was practically a total one and an entire new equipment will have to be secured.

From the press dispatches relating to the total destruction of the Indianapolis Switch & Frog Company's plant at Springfield, Ohio, it may have been inferred that the plant of the Fairbanks Machine Tool Company, which is located immediately west of the Switch & Frog Company, had been affected. The Fairbanks Company's plant, however, was not injured in any way. N. H. Fairbanks, a brother of Vice-President Charles Fairbanks, is vice-president of the Fairbanks Machine Tool Company and president of the Indianapolis Switch & Frog Company.

The Cincinnati Milling Machine Company, Cincinnati, Ohio, the prime mover in the new factory colony now under

way at Oakley, a suburb of Cincinnati, on April 24 formally transferred to the Modern Foundry Company approximately 6 acres of land at a cost of \$16,102. The Modern Foundry Company is to supply castings to the various machine tool and manufacturing interests that will be embraced in the colony. The same company also transferred to the Factory Power Company a tract of 1 acre. The latter company will supply heat and power to all the companies located in the colony. Work on the power plant is now under way, and when completed will represent an investment of \$100,000, including equipment.

John W. Kaufmann, secretary and treasurer, and John E. Galvan, general manager, of the Ohio Steel Foundry Company, Lima, Ohio, were tendered a banquet last week by the Commercial Club of that city, to celebrate the commencing of work on the new \$400,000 plant. The company expects to start up with a pay roll of 200 hands September 1, contracts already booked being sufficient to carry it for months beyond the date set for operating. The Lima Locomotive Company will take over 500 tons annually.

The Taylor Foundry & Machine Company, Westerville, Ohio, is the name of a new company organized by Burr Linabarry, president; W. C. Bale, secretary, and Frank Culver, treasurer, who with J. W. Everal, E. S. Williams and A. C. Hood constitute the Board of Directors. The principal product will be brass castings. It is stated that a suitable building will be erected at once.

The Wehrle Stove Works, Newark, Ohio, started up another of its cupolas April 22 which have been idle for some time. During the past winter the company's entire plant has been operated with a comparatively small force, but recently additional men have been employed. The company manufactures stoves, ranges, steam and hot water radiators and safes.

The new Hamilton Iron & Steel Company, which is erecting large blast furnaces at Coke-Otto, a suburb of Hamilton, Ohio, on April 18 gave a mortgage amounting to \$1,000,000 to the Cincinnati Trust Company. The company mortgages all the property at present owned by it and that it may acquire during the life of the mortgage to the trust company, which will act as trustee for the corporation. The interest is to be paid semiannually, and the bonds are not redeemable until 1917. Provision is also made that if the Hamilton Iron & Steel Company cannot or fails to pay the interest the Cincinnati Trust Company will do so.

## Government Purchases.

WASHINGTON, D. C., April 30, 1907.

The Isthmian Canal Commission will soon ask bids for a steam pump, several pneumatic geared hoists, ranging from 1 to 10 tons capacity; a number of jacks, 33 universal drills, nine wood boring machines, 33 long stroke riveting hammers, 33 chipping and calking hammers, one 48 x 48 in. x 16 ft. planer, one vertical boring and turning mill, one 5 ft. and one 6 ft. radial drill, one countersinking radial drill, one horizontal boring and drilling machine, two 34-in. sliding head drill presses, one 23-in. sliding head drill press, three 23-in. stationary head drill presses, three portable cylinder boring machines, one No. 3 universal milling machine, one No. 3 plain milling machine, one hand milling machine, one 32-in. pillar crank shaper, one 15-in. crank slotter, one 3-in. single head bolt cutter, one 12-in. pipe cutting and threading machine, two portable cylinder facing machines, one 72-in. hydrostatic wheel press of 300 tons capacity, one flue welding machine, one rotary splitting shear, one 79-in. driving wheel lathe, one 26-in. engine lathe, one 36-in. engine lathe, one 24-in. screw cutting engine lathe, three 18 in. screw cutting engine lathes, three 14-in. screw cutting engine lathes, one 14-in. tool engine lathe and two turret lathes.

The following bids were opened April 23 for supplies for the navy yards:

Bidder 16. The Brown Hoisting Machinery Company, New York; 22, Brooklyn Forge & Supply Company, Brooklyn, N. Y.; 28, G. F. Blake Mfg. Company, New York; 30, Browning Engineering Company, Cleveland, Ohio; 44, Cleveland Punch & Shear Works, Cleveland, Ohio; 48, R. P. Clarke Company, Washington; 50, C. & C. Electric Company, Philadelphia, Pa.; 51, M. T. Davidson, Brooklyn, N. Y.; 52, Dunham, Carrigan & Hayden Company, San Francisco, Cal.; 56, Dodge Cold Storage Company, Philadelphia, Pa.; 58, Edward J. Elting, Philadelphia, Pa.; 65, Frevert Machinery Company, New York; 76, G. & W. Mfg. Company, New York; 77, R. W. Geldart, New York; 92, Handlan-Buck Mfg. Company, St. Louis, Mo.; 94, Henshaw, Buckley & Co., San Francisco, Cal.; 98, Hilles & Jones Company, Wilmington, Del.; 102, Industrial Works, Bay City, Mich.; 109, Knox & Bro., New York; 123, Motley, Green & Co., New York; 126, Manhattan Supply Company, New York; 127, Montgomery & Co., New York; 128, Manning, Maxwell & Moore, New York; 141, Niles-Bement-Pond Company, New York; 145, New Jersey Foundry & Machine Company, New York; 146, National Electric Supply Company, Washington, D. C.; 152, Ole K. Olsen, New Orleans, La.; 168, John B. Roche, Brooklyn, N. Y.; 169,

H. A. Rogers Company, New York; 178, P. H. & F. M. Roots Company, New York; 195, B. F. Sturtevant Company, Hyde Park, Mass.; 220, Vermilye & Power, New York; 221, Vandyke-Churchill Company, New York; 232, Warren Steam Pump Company, New York; 240, Drew Machinery Agency, Manchester, N. H.

Class 13. One rotary blower—Bidder 58, \$900; 178, \$619; 195, \$773.

Class 15. Two hydraulic jacks—Bidder 22, \$479.80; 52, \$499.98; 77, \$509; 94, \$528; 109, \$545; 128, \$500; 152, \$522; 169, \$484.

Class 62. One hand power bending roll—Bidder 48, \$587; 123, \$594.30; 141, \$700; 221, \$510.

Class 63. One 100-ton wheel press—Bidder 128, \$910; 141, \$835 and \$596; 169, \$1182; 221, \$1100; 240, \$1250.

Class 64. One 10-ton locomotive crane—Bidder 16, \$7247 and \$9193; 30, \$7800; 56, \$6600; 102, \$6781; 123, \$7750.

Class 71. One combined punching and shearing machine—Bidder 44, \$1998; 65, \$3329; 98, \$2445; 141, \$3475.

Class 72. One motor driven horizontal punching machine—Bidder 44, \$1060; 98, \$1390.

Class 73. One motor driven flue cleaning machine—Bidder 127, \$535.

Class 75. Two 2-ton approved horizontal condensed air ice machines—Bidder 77, \$16,196.

Class 81. One vacuum pump—Bidder 28, \$330.50; 51, \$585; 128, \$345; 146, \$495; 232, \$290 and \$295; 240, \$580.

Class 121. One electric welding motor dynamo set—Bidder 50, \$1700.

Class 132. Twelve 2-ton trolley hoists—Bidder 76, \$1754.88; 77, \$1660.88; 92, \$1710; 109, \$1652.40; 123, \$1800; 126, \$1716; 127, \$1668; 128, \$1668; 145, \$1203; 220, \$1018.80.

Class 153. Two portable electric radial drills—Bidder 77, \$350; 109, \$350; 126, \$350; 128, \$350; 146, \$350; 168, \$350.

Class 158. Two air and circulating pumps—Bidder 28, \$756; 51, \$960; 232, \$790.

The following bids were opened April 20 for a locomotive jib crane for the League Island and Charleston navy yards:

#### League Island.

The Dodge Coal Storage Company, Philadelphia, Pa., item 2, \$6400, \$7576.

The North Penn Iron Company, Philadelphia, Pa., item 2, \$5200, \$5500.

The Browning Engineering Company, Cleveland, Ohio, item 2, \$6200, \$7300 B.

The Brown Hoisting Machinery Company, New York, item 1, \$6656; 2, \$8315.

#### Charleston.

The Brown Hoisting Machinery Company, New York, item 1, \$6750; 2, \$8400.

The Browning Engineering Company, Cleveland, Ohio, item 2, \$6200, \$7300 B.

The Dodge Coal Storage Company, Philadelphia, Pa., item 2, \$6475, \$7676.

The General Electric Company, Schenectady, N. Y., has been awarded contract for two turbo generator sets for the Boston Navy Yard, at \$34,400.

The Westinghouse Electric & Mfg. Company, Pittsburgh, Pa., has been awarded contract for the generator set for the Portsmouth Navy Yard, at \$52,182.

Under bids opened March 26 for supplies for the Isthmian Canal Commission, Circular No. 355, the Prentiss Tool & Supply Company, New York, has been awarded class 3, one horizontal boring machine, \$1320; Pratt & Whitney Company, Hartford, Conn., class 10, one turret lathe, \$1555.

The following awards have been made for supplies for the navy yards, bids for which were opened April 16:

The Chicago Pneumatic Tool Company, New York, class 163, two pneumatic grinders, with spare parts, \$421.80; class 201, two pneumatic drills, \$130.

Montgomery & Co., New York, class 202, four pneumatic revolving rivet forges, \$78; class 204, angle shears, punching and bending machines, \$298.75.

George F. Blake Mfg. Company, New York, class 203, two vertical simplex steam pumps, \$105.

Wm. Gardam & Son, Incorporated, New York, received an order from the Prentiss Tool & Supply Company for one 12-spindle motor driven drill, to be installed in shops at the Portsmouth Navy Yard. It will have silent chain transmission and geared feed and speed changing mechanism, and will possess several advanced features of construction.

**Catalogues Wanted.**—The Gemmer Engine & Mfg. Company, Wabash, Ill., desires catalogues of a general line of machinery suitable for the manufacture of automobile parts, such as steering gears and transmissions.

C. J. Colling has been appointed factory manager for the plant of S. Keighley Metal Ceiling & Mfg. Company at Follansbee, W. Va., and would be glad to receive catalogues from manufacturers of sheet metal working machinery of which the company is in the market for a considerable amount.

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# HARDWARE

**M**ORE than one manufacturer who is endeavoring to create a demand for his goods from the retail merchant through the medium of advertising in the popular magazines and periodicals has called our attention to the lack of interest and energy not to say indifference, shown by some merchants in looking after possible business resulting from this advertising. A well-known manufacturer has lately brought to our notice an instance of this sort.

During the period of one month he had referred to a Hardwareman in a Western State nearly a score of parties in his city and vicinity who had written to the manufacturer expressing their interest in his product and manifesting a desire to buy. Not hearing in any way from the merchant this favored, the manufacturer wrote to him recapitulating the names and addresses thus furnished and requesting a reply as to the disposition made of them. The response of the merchant was to the effect that he had not found time to write to the parties designated, but if the manufacturer would furnish suitable circular letter forms he would be pleased to put in the name and address, sign them and mail them. This proposition was naturally regarded with scant favor, there being probably a lingering doubt as to whether use would be made of the circular letters if furnished. After getting the consumer interested, at a cost perhaps of \$1 for each reply, the retail merchant in the judgment of the manufacturer, and we believe of the trade, should have shown a little more interest and energy.

This experience, it is to be hoped, is not a frequent one, and enterprising and aggressive merchants generally, we have no doubt, appreciate the assistance in many ways given them by manufacturers in bringing their goods to the attention of the public and are co-operating efficiently to their own and the manufacturers' advantage.

It is evident that Hardware manufacturers are making a greater effort than heretofore to bring home to their customers, both jobbers and retailers, the necessity of remitting within 10 days or the 30 days, as the case may be, if they hope to secure the discount for cash offered for payment within the period agreed upon. The lines are being drawn closer and merchants are reminded that a rigid observance of the terms of sale is not only expected, but required. On the other hand, many merchants, realizing the justness of the manufacturers' position in this regard and recognizing that the practice of deducting a discount to which they are not entitled is reprehensible and unbusinesslike, are meeting the views of the manufacturers and are either sending in their remittances on time or waiving the discount when payment is made after the cash premium period has expired. This is as it should be, and is creditable to their sense of fairness and equity.

In this reform movement the American Hardware Manufacturers' Association is taking a conspicuous part. Some of the large jobbers have been overliberal in interpreting the terms of payment, to the annoyance and vexation of manufacturers, some of whom are loath to be as stern and strict with their large customers as circumstances and good business usage warrants. Recently the association has been inviting the several hundred manufacturers identified with it to submit lists of parties

offending in this respect, and the response, we understand, has been very general, and the action of the association in taking up this matter in an official and energetic manner warmly indorsed. With a little firmness on the part of the makers of goods and a little thoughtfulness and consideration on the part of the merchant buyers the unbusinesslike practice should be nearly if not entirely eradicated.

## Condition of Trade.

One of the conspicuous and gratifying features of the situation is the fact that business is of such a character as to justify its earnest prosecution by manufacturers and merchants, in the reasonable expectation that they will find a good and perhaps ample return for their efforts. Apart from the questions which naturally suggest themselves, and are indeed forced upon the attention by constant reference to them, in regard to the outlook for the future and the length of time the existing activity in trade and prosperity among the people will continue, it is important to note that business moves along in great volume and that both the producers and the distributors of goods are fully occupied with what bears every evidence of being satisfactory trade. The strength which characterizes prices and the fact that it is a seller's market, inasmuch as it is rather a question of getting goods than the price which is to be paid for them, give a condition in which ample profits should be realized. One of the features in the situation which still causes inconvenience is the delay experienced by the merchants in receiving goods ordered from the manufacturers, most of whom are seriously behind in their orders. This delay is connected with the slow movement of freight, a matter to which the existing heavy demand directly contributes, as the railroads are called upon to handle an amount of merchandise which overtaxes their facilities. In some lines manufacturers are more nearly abreast with their orders than would appear from a casual observation in the premises. The fact is undoubted that later orders at existing comparatively high prices are in not a few cases given the preference and executed before earlier ones placed at lower figures. Manufacturers in general may be referred to as more nearly caught up with the demands upon them than was the case a few months ago; but in some lines the difficulty in getting goods continues without much abatement. Prices as a rule are steady and strong, with few quotable changes within the week. The late spring and the prevalence of cold and stormy weather in many sections have had a deterring effect upon business for spring and summer goods, a fact which is not without its good side, as these are lines in which there is a good deal of difficulty in obtaining adequate supply. The crops will continue to be a topic of increasing interest and importance, which will be canvassed, it is safe to say, amid the usual prognostications of disaster, which it may be hoped will be proved false by an abundant harvest.

### Philadelphia.

**SUPPLEE HARDWARE COMPANY.**—The month just passed has reflected the weather conditions, and the demand for goods has varied a good deal in accordance with the rise and fall of the thermometer. As a whole, it shows a very satisfactory movement, and in the aggregate is fully up to a year ago. The bad weather has been a godsend to some manufacturers of seasonable goods, who,

even with the present conditions, are so far behind in their orders that one shudders to think what the conditions would have been had the ground hog failed to see his shadow. It is hard for the average merchant to appreciate the difficulty that factories experience in keeping up with the demand, and if the trained merchant is hard to convince, we realize that the consumer, with whom he comes in personal contact, must be still harder to satisfy with an explanation that the Hoe or bale of Poultry Netting which he has immediate use for is still in the factory, although both the retailers' and jobbers' orders were placed for immense quantities during the third quarter of the year before.

It is still harder for those of us who are in the midst of strenuous efforts to supply the demand for goods, to credit the foresight of some of the pessimistic financial writers, who seem to see a great slackening of general business in the immediate future. There is absolutely no evidence of it among mechanics, farmers, builders and others, and we are still unwilling to believe that a very serious depression can start in Wall Street brokers' offices, or in the sanctum of some railroad president. We have an abiding belief in the basis of prosperity as represented by the farmer and wage earner, and the demand created by their actual wants.

#### St. Louis.

**NORVELL-SHAPLEIGH HARDWARE COMPANY.**—We are getting out Skates and Sleds and putting Ice Cream Freezers and Hammocks back into stock. The law of compensation, that Mr. Emerson discovered, is working; or as another philosopher expresses it, "If you step on a dried bull's hide in one place it rises up somewhere else." In the month of March we enjoyed summer weather. April evens up by giving us a sample of winter.

In many parts of the West where moisture was needed there has been rain and snow. This helps. In the mountains the heavy snowstorms will provide plenty of water for irrigation the coming summer. It is pretty hard for Dame Nature to suit everybody. Probably Nature herself is just as much interested in the prosperity and welfare of the green bug as she is in the farmer or the captain of industry.

In the meantime Nature continues her wonderful panorama of sunrise and sunset. Cloud effects in their beauty defy the art of a Gainsborough. All the beauties of the world are without cost to him who knows how to see. How artificial we of the cities have become! When some wonderful display of nature is pointed out to us we say "That is almost as good as a certain scene in such a play."

The rich live in terror of poverty, but do not the educated poor get far more out of life than those rich men who have never had time to take an inventory of the world in which they live?

Every year at this season we have these "thrills" about the crops. Thousands of merchants, big and little, are watching the signs of the times. They fear the promised reaction. Will not these very fears bring upon them the thing they fear? What all of us need is courage—the courage that does not fear poverty because it does not overvalue riches. After all, the poor are mighty good company, and they do not have to fill you up with champagne in order to appreciate their jokes. Suppose our prosperity has come to an end—what then? Isn't it about time some of us were eating and drinking less and taking more exercise? What's the matter with the simple life?

No, dearest, we have not filled our orders for that line of spring goods. The wonderful combination that proposed to do such wonderful things in the way of prompt shipments of collective cars seems to have a severe attack of locomotor ataxia. There does not seem to be any head to this aggregation of talent. If you tackle one shining light he refers you to another.

They claim it is a shortage of cars, but the records show when cars are provided they are turned away empty. In the meantime the cold spell helps the situation. We try to explain the delays in shipping to our customers. We lay it up against the railroads. The poor

railroad! Like the goat of old, the sins of the people are laid on its back and it is sent out in the wilderness.

I suppose when the season is over all of us will receive liberal shipments of these spring goods. We will be expected to pay the carrying and warehouse charges until next season.

To a man up a tree, it looks like a mixture of bad judgment and poor management. Probably it would be better for the aggregation to dissolve itself into its component parts and allow each part to take care of its own business. While in past seasons there have been some delays, this year the situation is far worse than ever before.

Notwithstanding the unseasonable weather, business in April has been very good. We show a substantial increase over last year. Collections have also been unusually satisfactory, and this favorable condition seems to exist in all parts of our territory.

#### St. Paul.

**FARWELL, OZMUN, KIRK & Co.**—April closes with a good record for trade and with very fair prospects ahead for the summer's business. If the weather had been mild, trade would probably have been larger in some sections, while in others it would not have been so large. In this immediate section the weather during April has not been unfavorable, either as to temperature or precipitation, and seeding of small grain is well along, but in the Northern parts of Minnesota and North Dakota little or no seeding has been done. However, there has been little time lost if mild weather now sets in and if vegetation soon starts. The first of May generally brings these conditions, and we shall hope that this year will not be an exception.

There is a strong, hopeful feeling in business circles, and the disposition is favorable for a healthy trade. Speculative buying is not indulged in, while there is but little tendency toward holding back in giving orders for necessary wants.

Building improvements for the year promise now to be sufficient to keep labor actively employed even at its present scale of prices. It also would appear that there will be an active demand during the year for manufactured goods in nearly all lines. If fair crops show up at harvest there will be little fear either of prices of merchandise, or of the general conditions of business.

#### Omaha.

**LEE-GLASS-ANDRESEN HARDWARE COMPANY.**—The month of April closes with trade conditions in the Trans-Missouri region extremely favorable. The volume of business is something big. In practically every part of this section of the country numerous evidences are apparent everywhere in the shape of new buildings and general betterment, both for commercial and residential purposes. Prices remain firm, and there seems to be little disposition to criticize the advances that have occurred from time to time.

The extent and value of the coming crops will be the next feature of importance having a bearing on the future trend of traffic, and upon this will largely depend the extent of business during the autumn months.

There is nothing in the situation at the present time, nor any developments in sight calculated to disturb the very satisfactory volume of business that everybody is now enjoying.

#### New Orleans.

**WOODWARD, WIGHT & Co.**—We have had too much rain here in the last few days, which has had a damaging effect on all crops, particularly on the lighter crops, and on cotton. The cotton situation, however, is one that can be remedied, as we have in times past planted cotton in the middle of May and got a very large crop that same year, after the first planting had been entirely ruined.

The car shortage is disappearing very rapidly. In fact, in most sections it has disappeared entirely. It seems to bring with it no depressing effect on lumber prices.

Collections are coming in fairly well, but not as rapidly as they have at some times in the past. There is plenty



of money to be got, however, at reasonable rates on ordinary commercial and manufacturing enterprises.

There is a great deal of contractors' work to be let in the next six months, and there should be considerable activity in that line.

The regular lines in the Hardware trade are moving freely, although, with us, not quite up to the volume of last year. Orders are numerous, in fact, more so than last year, but the quantity does not seem to be quite as great. This is probably due to the general feeling of conservatism throughout this section, and a desire to see how the great crops of the country turn out before any one stocks up very materially.

Deliveries on a great deal of heavy stuff are getting much better, and in some lines very prompt shipment can be had from the factories.

The general feeling throughout this section is that if we have first-class crops and the money market is in good shape for the last half of the year there is every prospect of as heavy a business for the remainder of 1907 as we had in 1906, and this slight conservatism in buying at the present moment is rather a good thing for all concerned.

There are a great many movements on foot in this section to get more labor into the country, and if these are successful and we get labor such as the better class of Italians that we have in some sections here it will make a great improvement throughout all our section.

#### Louisville.

**BELKNAP HARDWARE & MFG. COMPANY.**—The exceptional present activity in the market is setting at naught all previous records, for at this season we naturally look for a decided lessening of the demand and consequent falling off in business. But there are evidently more people, and more prosperous people, in the country than ever before. And there is no special reason why they should hoard money, particularly as all the tax gatherers arrange to discourage that very process. It is the thriftless man who blows in all he has, sometimes before he gets it, for whom the assessor and tax gatherer have no terrors.

If we only knew some way of forcing the drones and spendthrifts to provide in some shape for the expenses of the State and city, it would be most desirable to put it into practice. The main hope of all these gentlemen content to go through the world with flat pocketbooks—and they have many disciples in the better walks of life—is that some time or other they will be pensioned and not have to bother with providing for themselves. This not only applies to those who actually did service in the wars of their country, but to those who were in any way allied to the service in any of its departments—not merely the soldiers who went to the front, or the sailors who stood behind the guns, but nurses, errand boys and bottle washers of every variety have their champions for pension claims. And once in, like the head of the camel, the body follows in the way of increases—no trifling ones either. Then come police and fire departments in the cities, letter carriers in the post office and preachers of the various denominations. It is so easy to have the public funds or the corporate funds provide for old age instead of calling on sons and daughters and relatives to do their duty. It is easier than to save as we go along. Just what will become of us if we continue to foster the expectation of provision for our wants by some means other than our own savings or by the promptings of filial affection and duty, it is hard to say. Graft is a lusty weed and grows where nothing else will.

Money rates seem to be working easier, although the banks are still cautious in their loans, and many would-be enterprises are held in abeyance until the earning power of what is already out has been better demonstrated. The demands of labor in nearly every instance have been successful if reasonable. If this results in more conscientious labor and better work nobody will begrudge the advances. Certain it is that we are on a higher plane of expense for living than we were a few years ago, whether permanently or not remains to be seen. It is very difficult to mark things down when once they are up. If it results in the greatest happiness to the

greatest number, may be it is the right thing to leave them up.

#### Cleveland.

**THE W. BINGHAM COMPANY.**—Trade and traffic in all lines of Hardware, Mining, Milling and Manufacturers' Supplies is excellent in this section. A large percentage of the people of the United States live in the small towns and villages and on the farms surrounding them, and for a number of years back the farmers have had splendid crops, which have brought them high prices, and our farming community never was so prosperous as at the present time. Mortgages have been paid off, farms have been improved and the farmers now have money in the banks. People in these circumstances usually spend their money freely, not only for necessities but for the luxuries of life, and the kind of Hardware bought nowadays is of a much higher grade than in former years. There is a big demand for a high grade of Mechanics' Tools, Builders' Hardware and House Furnishing Goods.

The great amount of advertising that is done by the manufacturers direct through the local papers and magazines attracts the attention of our country cousins to the quality and usefulness of many articles that are on the market. All these things tend to largely increase the lines of goods that are sold by the country merchant, and his stock of goods is continually being enlarged on different lines and qualities of Hardware. Manufacturers have cheapened the cost of different articles so much by making larger quantities and turning them out by improved machinery that it enables them to put their goods on the market at a figure that is within reach of every one.

The spring trade of 1907 is going to be a record breaker in all lines. Manufacturers have so many orders on their books for some kinds of goods that they are unable to make as prompt shipment as they would like. We refer to Merchant Steel and Iron Pipe, Galvanized Sheets, Picks and Mattocks, Wire Cloth and Netting, Cast and Malleable Fittings, Screws, Machine and Carriage Bolts, Strap and Tee Hinges, and many other kindred goods.

The unusual demand just now and the large consumption of goods and everybody desiring to be waited on first has a tendency to a certain extent to create a shortage on some lines. However, many jobbers being early alive to the situation and anticipating a scarcity, provided themselves with many lines of goods in good season and are very well fixed now to supply the demand. Although stocks in many lines of goods are somewhat broken the Hardware jobbers throughout the country are undoubtedly carrying larger stocks of goods now than ever before, and customers will get their wants supplied in reasonably prompt time.

#### Portland, Oregon.

**FAILING, HAINES & MCCALMAN.**—As usual, the writer is highly optimistic. Conditions in the Hardware business were never more favorable than they are to-day. This, in fact, is true of all lines. The prosperity is very well shown by building permits, which for the month of March were much larger than ever before in the history of the city. Crop conditions are very favorable for a full yield in all lines, and farmers are looking forward to the season as one of great prosperity for them. The lumber industry is making rapid strides in prosperity, and at present shows no indication of any falling off. In fact, all the businesses on which the prosperity of this territory is dependent are in extremely favorable condition.

The writer last week had an opportunity for comparing notes with jobbers in Seattle, Tacoma and Spokane, and the general report was that not only had they never known better general conditions, but that the outlook was for even more prosperous times, if possible, than the present. Their only complaint was that they could not get service from the railroads bringing in their shipments from the East. One house reported having had a car out considerably over six months, and others had similar stories to tell. They all say, however, the congestion is being cleared, and that the conditions are growing steadily more favorable. We are hoping, therefore, that soon we will have some prospect of getting our

goods within reasonable time after shipment. This slowness of transportation is, of course, affecting business unfavorably, but this is the only unfavorable condition with which we have to contend, and, as we said before, this is steadily improving.

#### Nashville.

GRAY & DUDLEY HARDWARE COMPANY.—Four months of 1907 have come and gone, and the business record of these four months undoubtedly indicates great prosperity still prevailing throughout our country. Those who have had faith and predicted good business for 1907 are still able to say "I told you so."

We have never seen a better demand for Hardware at this season of the year than exists at the present time. Manufacturer, jobber and retailer are all enjoying a good business, nor do we see any reason why in the midst of all this great prosperity the whole country should turn turtle and go to the "demnition bow-wows." So long as the producers are receiving handsome prices for their product, manufacturers, merchants and miners all doing a satisfactory business, the railroads uncomfortably crowded, why should we declare that prosperity can last no longer, and go to predicting panics, hard times, &c.? We are among those who believe that if people will attend to their business and quit making these predictions our country will be prosperous for quite a while yet.

We are having very unusual weather in this section; April only gave us one real spring day, the others being cold and in most cases damp and unpleasant. The cold weather in April has killed a great deal of our fruit. It has also destroyed the early vegetable crop, which is of considerable value. At this season of the year we are usually shipping tomatoes and strawberries in great quantities to the Northern markets; none of the former and very few of the latter have been shipped from this State up to date. The weather has also to some extent injured the wheat crop, though this damage was not general, but only applies to the early wheat, which had considerable growth. We think in most cases the wheat will recover from this damage and the vegetables will come along later.

### NOTES ON PRICES.

**Wire Nails.**—Mills are falling further behind on shipments instead of catching up. Manufacturers are reported as being from one to three months behind on deliveries owing to the large amount of new business and specifications on contract orders, both classes of purchasers being urgent in requesting promptness in having their needs supplied. Stocks at mill and in the hands of jobbers are light. The market continues very firm. Quotations are as follows, f.o.b. Pittsburgh, plus actual freight to point of delivery, 60 days, or 2 per cent. discount for cash in 10 days:

Carloads, to jobbers.....	\$2.00
Carload lots, to retail merchants.....	2.05

**New York.**—The local demand is somewhat moderate, but owing to delayed shipments from mills, jobbers would not be able to supply a heavy demand. The mills are so far behind in shipments that one company has adopted the plan of shipping such sizes as any mill may have made up, instead of waiting for any one mill to make all sizes required to fill a specification. This plan sometimes results in a jobber having fair stock of some sizes of Nails and a lack of other sizes. New York quotations are: To retailers, carloads, on dock, \$2.19; less than carloads, on dock, \$2.33; small lots at store, \$2.30.

**Chicago.**—The movement in Wire Nails swings on with undiminished force, and instead of being abreast of the tide and in position to promptly execute orders at this time according to predictions made a few weeks ago the mills are still far behind on shipments. Diplomats rather than salesmen are needed to satisfy the exhausted patience of waiting customers. Quotations are as follows: \$2.15 in car lots to jobbers and \$2.20 in car lots to retailers, with an advance of 5 cents for less than car lots from mills.

**Pittsburgh.**—New demand for Wire Nails is urgent and comes from all parts of the country. Some of the leading Wire Nail interests can make deliveries in four to six weeks, while some concerns cannot make shipments inside of three months. The Pittsburgh Steel Company, the second largest producer of Wire Nails in the country, is placing contracts for the building of an Open Hearth Steel plant to contain 12 60-ton furnaces. Within a year this concern will be in position to supply its own requirements of Steel, which it now buys in the open market. Stocks of Wire Nails at the mills and held by jobbers are very light, this being attested by the fact that every mail brings urgent requests for prompt shipments. The market is very firm, but unchanged. Quotations are as follows, f.o.b. Pittsburgh, plus actual freight to point of delivery, 60 days, or 2 per cent. discount for cash in 10 days:

Carloads, to jobbers.....	\$2.00
Carload lots, to retail merchants.....	2.05

**Cut Nails.**—At the meeting of the Cut Nail Association, held on April 30, ruling prices were reaffirmed. The manufacturers reported that they had abundance of business, both in the way of contract orders and current demand, and some expressed themselves as not being anxious to book additional orders at present. Raw material is high in price and difficult to obtain. The shortage of cars also interferes with shipments. There appears to be no reason for anticipating prompt shipments in the immediate future. Quotations are as follows, f.o.b. Pittsburgh: Carload lots, to jobbers, \$2.05; less than carloads, to jobbers, \$2.10; less than carloads, to retailers, \$2.20. Iron Cut Nails at points west of and including Buffalo and Pittsburgh, are held at 10 cents advance on Steel Cut Nails.

**New York.**—The assortment of Cut Nails in the hands of local jobbers is still more or less broken, owing to delay in receiving shipments from mill. Demand is moderate. Jobbers' quotations are on the basis of \$2.30 for small lots at store.

**Chicago.**—While the present demand has suffered no noticeable decrease, indications point to a lessened degree of urgency in the near future. Car shortage and mill congestion still interferes with prompt service in deliveries, and at times results in a scarcity of certain sizes. Quotations are as follows: Iron Cut Nails, car lots, to jobbers, \$2.30; to retailers, \$2.35; Steel, to jobbers, in car lots, \$2.20; to retailers, \$2.25.

**Pittsburgh.**—The Cut Nail Association is holding a meeting in Philadelphia to-day (Tuesday), but it is not anticipated that any change in prices will be made. New demand for Cut Nails is only fair, but specifications against contracts are heavy and the mills are not catching up on contracts to any great extent. The scarcity of Steel is interfering with output and the shortage of cars with shipments. Quotations are as follows, f.o.b. Pittsburgh: Carload lots, to jobbers, \$2.05; less than carloads, to jobbers, \$2.10; less than carloads, to retailers, \$2.20. Iron Cut Nails at points west of and including Buffalo and Pittsburgh are held at 10 cents advance on Steel Cut Nails.

**Barb Wire.**—The demand remains active, notwithstanding the lateness of the season, and mills have not yet caught up with deliveries. The short supply of cars and scarcity of Steel reduce output and delay shipments. The market is firm, and quotations are as follows, f.o.b. Pittsburgh, 60 days, or 2 per cent. discount for cash in 10 days:

	Painted.	Gal.
Jobbers, carload lots .....	\$2.15	\$2.45
Retailers, carload lots .....	2.20	2.50
Retailers, less than carload lots.....	2.30	2.60

**Chicago.**—There is nothing in the present condition of the market that indicates a subsidence in the demand that has already overstayed its expected limit. Orders continue to pour in and buyers are still waiting long overdue shipments. We quote as follows: Jobbers, Chicago, car lots, Painted, \$2.30; Galvanized, \$2.60; to retailers, car lots, Painted, \$2.35; Galvanized, \$2.65; retailers, less than car lots, Painted, \$2.45; Galvanized, \$2.75; Staples, Bright,



in car lots, \$2.25; Galvanized, \$2.55; car lots, to retailers, 10 cents extra, with an additional 5 cents for less than car lots.

**Pittsburgh.**—While the season is late demand continues active, and the mills still have heavy contracts on their books and are behind in deliveries. The scarcity in Steel and shortage in supply of cars continue to operate against output and shipments. While prices are firm there are no indications of an early advance. Quotations are as follows, f.o.b. Pittsburgh, 60 days, or 2 per cent. discount for cash in 10 days:

	Painted.	Gal.
Jobbers, carload lots .....	\$2.15	\$2.45
Retailers, carload lots .....	2.20	2.50
Retailers, less than carload lots .....	2.30	2.60

**Smooth Fence Wire.**—The same conditions that obtain in the Barb Wire situation are prominent in the Smooth Fence Wire market, and the mills are unable to promptly meet the requirements of customers. The market is firm, and quotations are as follows, f.o.b. Pittsburgh, 60 days, or 2 per cent. discount for cash in 10 days:

Jobbers, carloads .....	\$1.85
Retailers, carloads .....	1.90

The foregoing prices are for base numbers, 6 to 9. The other numbers of Plain and Galvanized Wire take the usual advances, as follows:

	6 to 9	10	11	12	12½	13	14	15	16
Annealed....Base.	\$0.05	.10	.15	.25	.35	.45	.55		
Galvanized....	\$0.30	.35	.40	.45	.55	.65	1.05	1.15	

**Chicago.**—An exceedingly strong demand characterizes this, as well as all other departments of Wire mills. In spite of their best efforts the mills are unable to supply Fence makers' requirements with anything like reasonable promptness. Quotations are as follows: In car lots, to jobbers, \$2, f.o.b. Chicago, and to retailers, \$2.05.

**Pittsburgh.**—The demand continues animated and owing to scarcity of Steel and shortage in supply of cars the mills are not catching up on delayed shipments to any extent. Prices are very firm, but unchanged. We quote f.o.b. Pittsburgh, 60 days, or 2 per cent. discount for cash in 10 days:

Jobbers, carloads .....	\$1.85
Retailers, carloads .....	1.90

The foregoing prices are for base numbers, 6 to 9.

**Roller Skates.**—While Roller Skates are selling this spring at a considerably higher range of prices it does not appear that the advance made by nearly all manufacturers has had any appreciable effect in reducing the demand. It is declared that better prices were fully justified by conditions, as nearly all makers have been unable to keep up with their orders, and there has also been a considerable increase in manufacturing costs. While the rink business shows some signs of reaction in the South and Southwest it is still at its height in most sections of the country, and will undoubtedly afford one of the most popular forms of recreation to the summer resorts this year. A general reaction, such as usually follows a popular craze is not unlikely before long, but sales of Skates are unprecedented and still rapidly increasing.

**Lawn Mowers.**—Considerable unanimity is shown by manufacturers of Lawn Mowers in expressing the opinion that prices on the greater part of their business for the season just closing have been unremunerative, especially in view of heavy increases sustained in material and labor costs. Some state positively that they will be unable to renew any contracts this summer at anything like last year's figures. A saving feature of the situation, however, has been the increased demand for mowers of the better grade, on which of course a higher percentage of profit is obtained. A report is now current to the effect that active steps are being taken looking toward a change of policy on the part of most of the leading makers, and an effort will be made to secure better prices by some sort of concerted action, especially on the cheaper grades of Lawn Mowers. If this project is carried out merchants may be able to view with more than usual complacency the possibility of carrying over some of their stock of mowers into next season. Jobbers' sales have recently been a little light as a result of the

backward season, but may be expected to respond promptly to better weather conditions.

**Rubber Belting, Hose, &c.**—While a very large volume of business has been done by the manufacturers of Rubber Goods, it would appear that their supplies of raw material and their facilities for production are such that they have been able to keep pace with the demand. Few of them are greatly behind their orders. Estimates of the increased consumption of these lines for the past two or three years range from 25 to 33 1-3 per cent. During this period all raw materials have steadily increased in cost, and it may be said in a general way that they are now at the highest level they have attained. Prices will be influenced, however, by the character of the next semi-annual crop of crude Rubber, which comes into the market in the fall. Cotton Duck, which is a large element in the production of these lines, is high and somewhat scarce, although there seems to be no reason to fear that supplies will be insufficient for the manufacturers' needs. Prices on finished products have, of course, reflected the upward movement of raw material, although advances vary according to quality, prices being from 20 to 40 per cent. higher than a couple of years ago. A considerable quantity of low grade Agricultural Belting is handled by jobbers at prices ranging from 60 to as low as 70 per cent. discount. Nearly all important manufacturers, however, are giving increased attention to the better grades, and it is asserted that there is only a limited market for the merchant who does not handle a standard product. The market for Garden Hose presents no novel features, Composition Hose being sold in large quantities as low as 4½ cents per foot. Prices on Hose of good quality range from 7 to 12½ cents per foot.

**Bicycles.**—Since 1904, which probably marked the low point in the Bicycle industry, there has been a slow but healthful recovery in business. The impression should not be given that anything like boom conditions prevail, but there is an encouraging increase in the demand for wheels as a convenient means of transportation, leading to an increased output of from 10 to 15 per cent. during the past year. Very accurate judgment of the scope of the market may be gained from the figures of producers of parts, many of which virtually control the market for their particular product. An advance of from \$1 to \$2 per wheel has generally been made over last season's prices, but this is said to bear principally on jobbers, as some factories have not advanced their prices to the retail trade, making it necessary for jobbers to sell at about the same prices as last year. Prices to consumers remain practically unchanged, although job lots have disappeared from the market, and with them the extremely cheap wheels which were to be had three or four years ago. Present prices, however, represent much better value for the money than could be had on the job lot machines referred to. Most manufacturers of parts have raised their prices to some extent, and, as already stated, many of them practically control the market for their specialties. Manufacturers of Spokes have felt the advance in copper, which is used for nipples. Lamps have, of course, advanced sharply as the result of the increased cost of Sheet Brass, and now run from 25 to 50 per cent. higher.

**Paris Green.**—The price of Paris Green remains unchanged, as per quotations given below. This season has been remarkable for the early and large demand. In fact some manufacturers had their entire season's product contracted for before prices had been announced. This is attributed to the fact that jobbers and merchants closed last season with practically no Green on hand. Manufacturers, as a rule, sold up very close to their last season's output. Quotations are as follows, subject to change without notice, on the basis of 5 tons and over:

Arsenic Kegs.....	26 c.
Kegs, 100 to 175 pounds.....	26½c.
Kits, 14, 28 and 56 pounds.....	27½c.
Paper Boxes, 2 to 5 pounds.....	27½c.
Paper Boxes, 1 pound.....	28 c.
Paper Boxes, ½ pound.....	29 c.
Paper Boxes, ¼ pound.....	30 c.

Terms, 30 days, net, f.o.b. New York; Chicago delivery, ½ cent per pound advance.

The following extras are charged for smaller quantities:

5,000 to 10,000 pounds.....	1/2c.
1,000 to 5,000 pounds.....	1c.
500 to 1,000 pounds.....	1 1/2 to 2 1/2c.
Less than 500 pounds.....	3 to 3 1/2c.

The majority of manufacturers are charging 2 1/2 and 3 1/2 cents advance, respectively, on the last two quantities.

**Escutcheon Pins.**—An advance of 10 per cent. in quotations on brass Escutcheon Pins has been made by the leading manufacturers. The market price to good retail trade may be represented by a discount of 50 per cent. Prices on iron Escutcheon Pins remain unchanged.

**Rope.**—The month of April, taken as a whole, has been rather disappointing to manufacturers of Rope. While the factories are moderately busy demand has not come up to anticipation. High grade Manila Ropes are firm in price, somewhat remarkably so, in view of the business being transacted. Mixed grades are reported as obtainable from 10 cents up, according to the material used in the manufacture. While no change has been made in card prices the following quotations are subject to some irregularity, as stated. Quotations are as follows: Pure Manila, 13 to 13 1/2 cents; B quality, 12 to 12 1/2 cents; Pure Sisal, 9 1/4 cents; No. 2 quality, 7 3/4 to 8 cents; No. 1 Jute, 1/4 in. and up, 9 cents; No. 2 Jute, 8 1/2 cents.

**Window Glass.**—According to recent reports there are about 600 pots independent in blast, instead of 400 alluded to in our review of the Glass market last week. It is also reported that the prices of the American Window Glass Company are lower than those of the National Brokerage Company, and that in the latter there are some who favor reducing prices to a point that will move its Glass. Should this be done it is possible that some, at least, of the independent hand operated factories would be obliged to close down. In any event it does not appear probable that prices will be higher in the near future. The lack of active demand in this market has caused the shading of quotations in some cases. Jobbers' quotations from jobbers' list October 1, 1903, are as follows: Greater New York, 90 and 10 per cent. discount on all sizes, single and double strength; outside of Greater New York, 90 and 5 per cent. for single, and 90 and 10 per cent. discount for double strength Glass.

**Linseed Oil.**—Business continues moderate and, taking the demand so far this spring, disappointing. Flax Seed has recently declined something over 2 cents a bushel. Some of the trade are of the opinion that a revival of demand is not likely to show itself before June 1, and that crushers may get tired of holding their stocks of Oil at present prices before that date. New York quotations for jobbing lots are as follows, according to quality: City Raw, 42 to 43 cents per gallon; Out of Town Raw, 40 to 41 cents per gallon. Boiled Oil is 1 cent a gallon over Raw.

**Spirits Turpentine.**—Prices have weakened as the result of dullness and lower values at Southern points, including an absence of foreign demand. While production is decreasing, substitutes and adulterants appear to be on the increase, and it is reported that these find a ready market both in this country and abroad. In the local market buying is comparatively light, as lower prices are anticipated for Spirits Turpentine. New York quotations are as follows, according to quantity: Oil Barrels, 67 1/2 to 68 cents; Machine Made Barrels, 68 to 68 1/2 cents per gallon.

THE YOUNG & VANN SUPPLY COMPANY, Birmingham, Ala., was organized several months ago. I. F. Young is president; J. A. Vann, vice-president, and N. W. Shannon, secretary and treasurer, all of whom are men of experience in the lines covered by the company. A full line of Mine, Mill, Furnace and Plumbers' Supplies is carried. The company also acts as agent for manufacturers of Valves and Oiling Devices, Rubber Goods, Leather Belting, Chain Hoists, Coal and Ore Shovels, &c.

## HARDWARE CLUB MEMBERSHIP.

THE trade are familiar with the notable success of the Hardware Club of New York, which occupies a unique position as in a social and informal way the Hardware center of the country. This is owing in part to the fact that it is not only thoroughly representative of the trade of New York City, but has in its nonresident membership leading manufacturers and jobbers from other parts of the country. It is thus a place where a merchant or manufacturer visiting the city is sure to meet many representative men of the trade, who are regularly to be found there, as well as others who come to the club on invitation. The resident membership is full, with a long waiting list, but, as announced in the following letter sent to the members, there is still an opportunity for the admission of nonresident members:

Our waiting list for resident members is considerably over 100, so that more than a year must elapse between the time of nomination and election.

In our nonresident membership there is still opportunity for nearly 50 applicants. Any man whose business and residence is more than twenty (20) miles from the City Hall is eligible to membership.

We are particularly desirous that as many leading Hardware merchants as possible be added to the nonresident list.

Admissions Committee: Joseph Gales, Terence F. Curley, Francis B. Griffin, Edward Stagg, Richard R. Williams.

An opportunity for approximately 50 additional members in the nonresident class is not referred to with a view to securing additional revenue, for the finances of the club are fortunately in excellent condition, its income being ample to meet all reasonable requirements. It would, however, from a trade standpoint, be desirable for gentlemen connected with the manufacture or sale of Hardware in other parts of the country to become identified with it, for in this way the club would be made still more representative of the trade.

## MICHIGAN HARDWARE CONVENTION.

THE 1907 convention of the Michigan Retail Hardware Association will be held on Wednesday, Thursday and Friday, August 14, 15 and 16, at the Hotel Cadillac, Detroit. It has been determined to hold the business sessions in the afternoons only. Experience has shown that a great many of the members like to visit the exhibits made in the rooms and corridors of the hotel, and as a matter of courtesy to the manufacturers and jobbers who will be represented at the meeting the mornings will be left open, so that the merchants will have ample opportunity to see all the new lines of goods and visit with their friends, the traveling men, the early part of the day. In return, it has been decided to ask all exhibitors to close their rooms promptly at 1 p. m. This arrangement will doubtless be heartily approved by all the manufacturers and jobbers who attend the convention.

A committee has been appointed to look after the details of the convention programme, and is constituted as follows: Henry C. Weber, Detroit; J. B. Sperry, Port Huron; J. G. Patterson, Detroit, and Secretary A. J. Scott, Marine City. In view of the situation which has developed at some previous meetings when on account of a rush of business the election of officers has been postponed until after some of the delegates had left for home it was decided to make the election of officers a special order of business on Friday afternoon, the third day of the meeting.

Every effort will be made to make the 1907 convention a notable one, and a large attendance is likely. Quite a number of accessions to the membership have been made since the meeting last August, and it is hoped to show a very substantial gain for the 12 months.

THE CHAPIN-STEPHENS COMPANY, Pine Meadow, Conn., manufacturer of Rules, Planes, Levels, Gauges, &c., has removed its New York store from the Franklin Building, 9-15 Murray street, to new and much more commodious quarters on the street floor at 126 Chambers street, where John E. Humason will continue manager, as heretofore.



## Hardware Window Display.

### FOURTH ARTICLE

**I**T must of course be recognized that Hardware commodities do not possess the flexibility or variety of color that some goods do. The Hardware windows will necessarily lack the graceful lines and agreeable blendings of color which arrest the attention in passing a dry goods store. Individuality of form and design, however, is conspicuous in most Hardware articles; they are interesting in themselves, and these qualities may be utilized to good advantage. People will not expect to see elaborate gowns or highly colored neckties or hosiery in a Hardware stock, and it may be that they are somewhat wearied by the unending displays of such articles which always line the streets.

#### Practical Hardwareman Can Make Best Display.

For best results articles of Hardware should be displayed by a man who understands the Hardware business.

**Knows Goods.** He knows their good points, their uses and their practical construction better than another, and can display them in a way to appeal to actual users. Many merchants have been successful in placing the responsibility of the window on one of their employees possessing

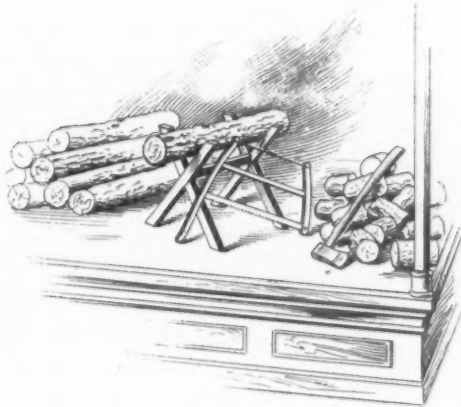


Fig. 9.—Who's Sawing Wood?

perhaps some special qualifications in the way of taste and encouraging him to study the subject, originate plans and develop himself along this line in every possible way. If a man is selected who is enthusiastic, in whom confidence may be placed and who may be expected to remain permanently in his position, it will be found that the time which he gives to this subject and the efforts made by the merchant in assisting him will be well spent.

#### Goods Shown in Use.

It will always add to the effect of any article if it can be shown in actual use. For instance, a plant stand if filled with plants and artistically placed in the corner of a window, with a rug or a bit of furniture, will often induce sales. The observer's mind immediately forms a pleasing picture of some window or corner at home which would be enhanced by such a stand. What a brightening effect it would have on the dining room or the library! The Hardwareman will have no difficulty in securing the loan of plants from a neighboring florist, who will be glad to have them used on a chance of making a few sales. Even if no immediate results can be traced to a display of this kind it will add to the general attractiveness and high grade appearance of the store.

**Flower Stand.** A Saw Buck in a window by a pile of cord wood, Fig. 9, a stick on the Buck, a Wood Saw, with the new style of blade leaning against it, with sawdust scattered as it fell is likely to attract no little attention from passers-by. It will probably cause them to stop and wait a few

moments to see if the man will not come back and go to work again. They will wonder whether he is paying an election bet or some other wager, or why he is sawing wood in such a place. One or two persons stopping out of such curiosity often become the nucleus of a crowd out of which a merchant may fairly expect some trade. At all events they are



Fig. 10.—Steam Up, Something Doing.

likely to remember his store as the place where Saws are handled.

A good way to show a Wire Mouse Trap is to arrange a large number in a window with one Trap for the central figure, containing a number of live rodents which have been caught in it. People are sure to stop and watch the antics of the little beasts, and are not unlikely to recall the need of a Trap at home. At least they will remember where Traps can be bought.

#### Range In Operation.

A Cook Stove or even several Cook Stoves set up in a window would probably not attract particular atten-



Fig. 11.—Stocked Refrigerator and Ice Tools.

tion, as most Stoves look a good deal alike to the average person. If they were noticed at all they would simply give the idea that Stoves were carried in stock. If, on the other hand, a single Stove is prominently shown, as in Fig. 4, with two or three joints of Stove Pipe and

**Concealed Flame.**

an Elbow attached, running apparently into the side wall, with a kettle of boiling water heated by a gas jet or Lamp Stove concealed in the firepot, a Scuttle half full of coal standing by or a few sticks of Stove wood lying beside it, with Shovel, Poker, Tongs and Kitchen Utensils conveniently and naturally placed, and an appetizing brown loaf in a Pan on the hearth—such a display immediately becomes an object of interest. People will stop for a second look at the natural, homelike scene. They will wonder where the smoke goes, as there are no indications of a chimney, and whether coal or wood is being used as fuel. This curiosity will give them time to examine the peculiarities of the Stove, and may result in their entering the store and making some inquiries if not purchases. If a merchant handles Mantels, Grates,

**Fire Sets, &c.**

lent opportunity for an artistic homelike display. They can be set up against the side wall, or back of the window, and may even be kept there permanently through the fall and winter. Allied goods, which can be included in such displays, include Spark Protectors, Coal Vases, Wood Boxes and Baskets, Andirons, Fancy Stands for Shovel, Poker and Tongs, &c. If convenient, a burning gas log in the Grate will increase the effectiveness of such a display.

**Refrigerator Display.**

A good way to show a Refrigerator is to demonstrate its capacity, convenience and good working qualities. This can be done without any trouble by placing one in the window, and putting in it such supplies as it would naturally contain, leaving the top up and the doors open or slides drawn out so that the interior would be readily seen and understood. Possibly the panels may be removed from the doors and glass substituted, as in Fig. 11. Ice should be put in the ice box, and a pan of milk, a plate of butter and a plate of old-fashioned sulphur matches would form a good combination to show up in the provision chamber demonstrating that the air is so dry it will not spoil the matches, and the circulation and ventilation are so perfect that the milk and butter which are particularly susceptible to taint are not affected by the sulphur. A neatly printed card large enough to be read from the sidewalk stating what the Refrigerator contains may be placed in the window with good results. A window display of this kind will not only tell the public that the merchant sells Refrigerators, but will tend to convince them that the style shown is a good one to buy. Allied lines which may be shown with the Refrigerator include Ice Tongs, Ice Picks, Ice Saws, &c.

**Well Lettered Cards**

are a great help in window dressing, even if they go no further than to give the name of the articles. People do not always know the names of articles carried in the Hardware store, and sometimes they are equally ignorant of the uses for which they are designed. This is particularly true of new goods and novelties. With such lines it is usually desirable to give the price in plain figures on a card, and the public is often attracted by a comparison of prices, such as "75 cents' worth for \$1," or "50 cents, formerly 75 cents," &c. Whether the wording on the cards is bright and witty or gives only the name and price of goods and whether the goods are of the finest or the cheapest grade, cards and lettering should be of the best. It will pay to have them done by a professional signmaker, if there is no one in the store who can do a first-class job.

(To be continued.)

THOMAS P. WALLS AND CHARLES J. BRAY, who until recently have been members of the firm of Armstrong, Walls & Co., 82 Centre street, New York, have become associated with Neal & Brinker Company, 18 Warren street. Both gentlemen are widely known in the metropolitan Hardware trade, and express the belief that their new connection will enable them to offer efficient and favorable service to their personal friends and customers.

**AN EASTERN MERCHANT'S VIEW OF CALIFORNIA.**

BY A. C.

SAN JOSE, CAL., is a short distance south of San Francisco, is in the earthquake belt, and was badly shaken in the great upheaval in April last. The Hardware stores are of the conventional type found near large cities. Santa Cruz, a seaside town without a harbor, depends upon the fruit grower and the tourist, so that the same counter displays Tin Pails and picture postals.

Aside from the large cities, there is little manufacturing in California, but Santa Cruz possesses one industry that many towns of the East "can't hold a candle to" in safety—that is, a powder mill. Great vans drawn by 8 and 10 mules loaded with wood for the mill present a picturesque sight as they come creaking down the mountain sides, the bells on the lead horses sounding a warning as they turn the short curves.

The proprietor of the store at Pacific Grove was in camp. The climate of California draws one into the open, and tent life all the year around is quite common. A great favorite with Hardwaremen is the camp wagon. By this is not meant a prairie schooner, with its mules and dangling water bucket, but an elaborate affair fitted with every convenience—beds, stove and convenient lockers—costing as much as an automobile.

**Mexican Bridles****That Cost Money.**

Santa Barbara, famous for its mission and hotel, presents little of interest to the Hardwareman, though the Saddlery Hardwareman might be attracted to the elaborate bridles made by Mexicans. These are made out of colored horse hair at the expense of infinite patience, bringing the maker \$40 and \$50 apiece. The best specimens are not found in the shop, but are exposed for sale by the Mexican who makes them, along the most frequented highways. His manner of presenting his wares is somewhat different from that of his white brother. Comfortably seated on the porch of his cabin by the roadside, with some specimens of his handiwork suspended on nails over his head, he awaits the curiosity of passers-by to open negotiations.

**Stains in****Great Demand.**

Not far from Santa Barbara, the summerland oil wells—some of which are drilled into the ocean—create a demand for Casing and Oil Well Supplies. One of the by-products, called distillate, is used by painters as a Paint thinner, the pure white retailing at 15 cents per gallon and the dark at 10 cents. Stains are in great demand in California, owing to the bungalow style of architecture. These English bungalows are built of wood with shingle roofs, the roofs invariably being stained as well as the sides. Various shades of reds and greens are used. Quite a popular combination is to have white roofs and trimmings, with body of house brown. The dry umbers, burnt and raw, in combination with raw sienna are used to obtain the shade desired. In consequence of the demand for painters' supplies, caused by the erection of so many frame houses, a comparatively small town will support several exclusive Paint stores.

In the Central West the department store idea of gathering under one roof various classes of goods is followed to the extent of having a plumber or tinner rent floor space and run his department separate from the Hardware store. This arrangement, while saving rent, gives the appearance of largeness to the collective business, at the same time preserving the individuality of each. In many of the California towns Paints and Wall Paper are treated the same way in connection with Hardware stock. The demand for painters' supplies is further increased by the extent to which tinted walls and frescoing are taking the place of Wall Paper in inside decorating.

**Tool Exchange****Departments.**

In Los Angeles the Hardware stores compare in appearance and stock with the best of those in the large Eastern cities. Owing to the great changes in population,



tourists and especially mechanics coming and going, there has sprung up a demand for a Tool exchange. To accommodate this demand some Hardware stores have established a department strictly for the purchase and sale of second-hand Tools. This department is quite profitable. The rapid increase in building operations, particularly of the steel and concrete class, draw a class of mechanics who, when one job is completed, move on to the next. While in a store having one of these exchanges a mechanic came in with a No. 12 Disston Saw, showing hardly a sign of use, gladly accepting \$1 for it. Some heavy Tools are rented, especially Jack Screws.

#### Houses Moved While You Wait.

Owing to the light construction of the first buildings erected, and the later demand for better structures, the old buildings are moved to cheaper locations, causing not only a demand for Jacks, but for all sorts of moving appliances. One of the oddities of the Pacific Coast is the way houses are moved. In some Eastern towns the moving of a frame house is a serious operation requiring time. The windlass in the center of the street, around which a slow-gaited horse paces over the ropes and around the creaking windless, the planks placed in the roadway for the snail-like movement of the house. In California towns it must be a good sized house that cannot be placed on the board trucks and whisked away before the eyes of the astonished tenderfoot.

#### A Noteworthy "Establishment."

A certain city in California has a Hardware store that stands in a class by itself. In a space 20 x 50 ft. is gathered the strangest collection of ironmongery the wierdest imagination could fancy. There are no show windows. The building had regulation bulkhead display windows, but the front part had been taken away and the space the window occupied used for outside display. Two lights of glass, one on each side of the door, were supposed to give light to the store, but as these were covered with dust and fly specks they failed in their mission. The proprietor was a Hebrew, a fact to be noted, as the Hebrew, prominent in every other branch of trade, is rarely found in the Hardware business, but accounted for in part from the fact that the stock was originally the tail end of a fire sale, which he bought for a lump sum without invoice. To this had been added other remnants, with no attempt at sorting or arrangement, consequently the shelves overflowed the counters, the counters the floor. Then from the floor, pile upon pile, back to the counters, until there was left but a narrow path to the rear.

The proprietor had a peculiar way of sweeping. When the litter at the front got to be too much for even his sense of order he would push the accumulation of peanut shells into this narrow path; and then repeat the operation, until even the path rose toward the ceiling.

At the rear of the store was a pile of Wire Cloth, Poultry Netting, Shovels, Rakes, Hoes and Post Hole Diggers.

The Saws were kept on a counter in a long box partitioned into bins about 8 in. high. The Saws were taken from their wrappers and placed in these bins, the customer handling and testing until suited. As the Saws were not wiped, but left lying, the result was a pile of rusty Saws, covering the bin so completely it was several weeks before it was discovered and with it a number of Saws supposed to have been out of stock.

This store was within a block of as well appointed Hardware stores as any in the West. Notwithstanding the condition of his stock and his lack of technical knowledge the owner did business.

(To be concluded.)

NEAL & BRINKER COMPANY, 18 Warren street, have been appointed New York agents for the Philips Pressed Steel Pulley made by Philips Pressed Steel Pulley Works, Philadelphia. This Pulley has a number of excellent features which the company believes will receive the favorable consideration of its customers.

#### A HARDWARE MERCHANT'S PRICE CARD CABINET.

THE long established Hardware store of S. W. Cornell on Court street, near Atlantic avenue, Brooklyn, N. Y., contains many features of interest to an observer of Hardware business methods. The store is one of the most attractive in the metropolitan district, being furnished with Warren shelving of dark oak finish and other high grade fixtures. All stock is well arranged with a view both to convenience and economy of space, and samples are effectively displayed, in most cases under glass to protect them from damage by dirt or rust. Some of the samples now in use have been up several years, but look as bright and fresh as new.

Although a handsome business is transacted, no attention is paid to House Furnishing Goods and allied lines, the stock consisting entirely of Hardware and

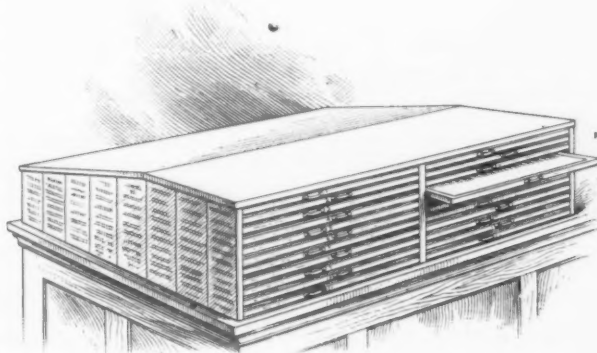


Fig. 1.—Cabinet Containing Price Cards Tacked on Slides; Index Indicated on the Outer End.

Tools. The Tool business is exceptionally large and necessitates carrying a stock of unusual size and completeness. The firm is also a large handler of staples, such as Nails, Screws, Bolts, &c.

Quite an interesting feature in the Cornell store is an original and convenient price card cabinet, which is kept in the center of the main floor, where most of the retail business is done. It is

#### A Very Practical Affair

with several advantageous features, principal of which is the fact that it is always accessible, cannot get out of place and may be used by several clerks simultaneously, as is often necessary in a busy store.

The list is kept in the desk top, illustrated in Fig. 1,

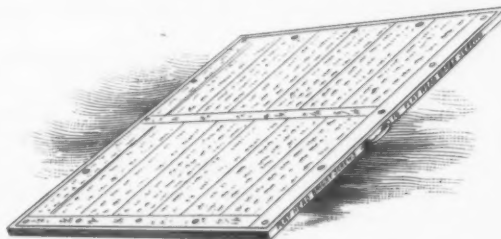


Fig. 2.—Perspective of Slide.

which is about 36 in. long, 28 in. wide and 7½ in. high. Prices are neatly written on sheets of cardboard and tacked on thin whitewood boards ¾ in. thick, fitted with Brass Box Pulls and running in slides arranged with enough space between them so that they will not bind or rub against each other. For convenience the Pulls are not placed directly under each other, but alternately at the right and left of the center of the board, making them easier to get hold of. The boards are 15¼ in. long and 13¼ in. wide and make two parallel rows in both the front and back of the desk. There are 40 boards in all, 22 in the front and 18 in the back, each being numbered in order and marked on the end, as shown in Fig. 2. Lists are tacked on both sides of the boards, the

marking on the left referring to the upper and that on the right to the lower side.

Index and Classification of Stock.

The desk sets on the end of a counter, so that front and rear are equally accessible, and on the outward side

Bolts, Carriage	12 A
Machine	12 B
Sink	13 A
Stove	13 A
Tire	13 A
Braces, Bit	9 B
Rail	20 A

Fig. 3.—Portion of Index to Slides.

is an index, indicated in Fig. 1, in which the goods listed are entered alphabetically and their location indicated. The figures show the number of the board, and the letters tell whether the list is on the upper or lower side, A indicating the former and B the latter. A portion of the index is reproduced in Fig. 3, while it is printed in full below, as many of our readers will doubtless be interested in studying the classification of the goods. The index contains all goods listed in the price cabinet, but

1/2	3/4	1	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6	6 1/2	7	7 1/2	8	8 1/2	9	9 1/2	10	10 1/2	11	11 1/2	12	12 1/2	13	13 1/2	14	14 1/2	15	15 1/2	16	16 1/2	17	17 1/2	18	18 1/2	19	19 1/2	20	20 1/2	21	21 1/2	22	22 1/2	23	23 1/2	24	24 1/2	25	25 1/2	26	26 1/2	27	27 1/2	28	28 1/2	29	29 1/2	30	30 1/2	31	31 1/2	32	32 1/2	33	33 1/2	34	34 1/2	35	35 1/2	36	36 1/2	37	37 1/2	38	38 1/2	39	39 1/2	40	40 1/2	41	41 1/2	42	42 1/2	43	43 1/2	44	44 1/2	45	45 1/2	46	46 1/2	47	47 1/2	48	48 1/2	49	49 1/2	50	50 1/2	51	51 1/2	52	52 1/2	53	53 1/2	54	54 1/2	55	55 1/2	56	56 1/2	57	57 1/2	58	58 1/2	59	59 1/2	60	60 1/2	61	61 1/2	62	62 1/2	63	63 1/2	64	64 1/2	65	65 1/2	66	66 1/2	67	67 1/2	68	68 1/2	69	69 1/2	70	70 1/2	71	71 1/2	72	72 1/2	73	73 1/2	74	74 1/2	75	75 1/2	76	76 1/2	77	77 1/2	78	78 1/2	79	79 1/2	80	80 1/2	81	81 1/2	82	82 1/2	83	83 1/2	84	84 1/2	85	85 1/2	86	86 1/2	87	87 1/2	88	88 1/2	89	89 1/2	90	90 1/2	91	91 1/2	92	92 1/2	93	93 1/2	94	94 1/2	95	95 1/2	96	96 1/2	97	97 1/2	98	98 1/2	99	99 1/2	100	100 1/2	101	101 1/2	102	102 1/2	103	103 1/2	104	104 1/2	105	105 1/2	106	106 1/2	107	107 1/2	108	108 1/2	109	109 1/2	110	110 1/2	111	111 1/2	112	112 1/2	113	113 1/2	114	114 1/2	115	115 1/2	116	116 1/2	117	117 1/2	118	118 1/2	119	119 1/2	120	120 1/2	121	121 1/2	122	122 1/2	123	123 1/2	124	124 1/2	125	125 1/2	126	126 1/2	127	127 1/2	128	128 1/2	129	129 1/2	130	130 1/2	131	131 1/2	132	132 1/2	133	133 1/2	134	134 1/2	135	135 1/2	136	136 1/2	137	137 1/2	138	138 1/2	139	139 1/2	140	140 1/2	141	141 1/2	142	142 1/2	143	143 1/2	144	144 1/2	145	145 1/2	146	146 1/2	147	147 1/2	148	148 1/2	149	149 1/2	150	150 1/2	151	151 1/2	152	152 1/2	153	153 1/2	154	154 1/2	155	155 1/2	156	156 1/2	157	157 1/2	158	158 1/2	159	159 1/2	160	160 1/2	161	161 1/2	162	162 1/2	163	163 1/2	164	164 1/2	165	165 1/2	166	166 1/2	167	167 1/2	168	168 1/2	169	169 1/2	170	170 1/2	171	171 1/2	172	172 1/2	173	173 1/2	174	174 1/2	175	175 1/2	176	176 1/2	177	177 1/2	178	178 1/2	179	179 1/2	180	180 1/2	181	181 1/2	182	182 1/2	183	183 1/2	184	184 1/2	185	185 1/2	186	186 1/2	187	187 1/2	188	188 1/2	189	189 1/2	190	190 1/2	191	191 1/2	192	192 1/2	193	193 1/2	194	194 1/2	195	195 1/2	196	196 1/2	197	197 1/2	198	198 1/2	199	199 1/2	200	200 1/2	201	201 1/2	202	202 1/2	203	203 1/2	204	204 1/2	205	205 1/2	206	206 1/2	207	207 1/2	208	208 1/2	209	209 1/2	210	210 1/2	211	211 1/2	212	212 1/2	213	213 1/2	214	214 1/2	215	215 1/2	216	216 1/2	217	217 1/2	218	218 1/2	219	219 1/2	220	220 1/2	221	221 1/2	222	222 1/2	223	223 1/2	224	224 1/2	225	225 1/2	226	226 1/2	227	227 1/2	228	228 1/2	229	229 1/2	230	230 1/2	231	231 1/2	232	232 1/2	233	233 1/2	234	234 1/2	235	235 1/2	236	236 1/2	237	237 1/2	238	238 1/2	239	239 1/2	240	240 1/2	241	241 1/2	242	242 1/2	243	243 1/2	244	244 1/2	245	245 1/2	246	246 1/2	247	247 1/2	248	248 1/2	249	249 1/2	250	250 1/2	251	251 1/2	252	252 1/2	253	253 1/2	254	254 1/2	255	255 1/2	256	256 1/2	257	257 1/2	258	258 1/2	259	259 1/2	260	260 1/2	261	261 1/2	262	262 1/2	263	263 1/2	264	264 1/2	265	265 1/2	266	266 1/2	267	267 1/2	268	268 1/2	269	269 1/2	270	270 1/2	271	271 1/2	272	272 1/2	273	273 1/2	274	274 1/2	275	275 1/2	276	276 1/2	277	277 1/2	278	278 1/2	279	279 1/2	280	280 1/2	281	281 1/2	282	282 1/2	283	283 1/2	284	284 1/2	285	285 1/2	286	286 1/2	287	287 1/2	288	288 1/2	289	289 1/2	290	290 1/2	291	291 1/2	292	292 1/2	293	293 1/2	294	294 1/2	295	295 1/2	296	296 1/2	297	297 1/2	298	298 1/2	299	299 1/2	300	300 1/2	301	301 1/2	302	302 1/2	303	303 1/2	304	304 1/2	305	305 1/2	306	306 1/2	307	307 1/2	308	308 1/2	309	309 1/2	310	310 1/2	311	311 1/2	312	312 1/2	313	313 1/2	314	314 1/2	315	315 1/2	316	316 1/2	317	317 1/2	318	318 1/2	319	319 1/2	320	320 1/2	321	321 1/2	322	322 1/2	323	323 1/2	324	324 1/2	325	325 1/2	326	326 1/2	327	327 1/2	328	328 1/2	329	329 1/2	330	330 1/2	331	331 1/2	332	332 1/2	333	333 1/2	334	334 1/2	335	335 1/2	336	336 1/2	337	337 1/2	338	338 1/2	339	339 1/2	340	340 1/2	341	341 1/2	342	342 1/2	343	343 1/2	344	344 1/2	345	345 1/2	346	346 1/2	347	347 1/2	348	348 1/2	349	349 1/2	350	350 1/2	351	351 1/2	352	352 1/2	353	353 1/2	354	354 1/2	355	355 1/2	356	356 1/2	357	357 1/2	358	358 1/2	359	359 1/2	360	360 1/2	361	361 1/2	362	362 1/2	363	363 1/2	364	364 1/2	365	365 1/2	366	366 1/2	367	367 1/2	368	368 1/2	369	369 1/2	370	370 1/2	371	371 1/2	372	372 1/2	373	373 1/2	374	374 1/2	375	375 1/2	376	376 1/2	377	377 1/2	378	378 1/2	379	379 1/2	380	380 1/2	381	381 1/2	382	382 1/2	383	383 1/2	384	384 1/2	385	385 1/2	386	386 1/2	387	387 1/2	388	388 1/2	389	389 1/2	390	390 1/2	391	391 1/2	392	392 1/2	393	393 1/2	394	394 1/2	395	395 1/2	396	396 1/2	397	397 1/2	398	398 1/2	399	399 1/2	400	400 1/2	401	401 1/2	402	402 1/2	403	403 1/2	404	404 1/2	405	405 1/2	406	406 1/2	407	407 1/2	408	408 1/2	409	409 1/2	410	410 1/2	411	411 1/2	412	412 1/2	413	413 1/2	414	414 1/2	415	415 1/2	416	416 1/2	417	417 1/2	418	418 1/2	419	419 1/2	420	420 1/2	421	421 1/2	422	422 1/2	423	423 1/2	424	424 1/2	425	425 1/2	426	426 1/2	427	427 1/2	428	428 1/2	429	429 1/2	430	430 1/2	431	431 1/2	432	432 1/2	433	433 1/2	434	434 1/2	435	435 1/2	436	436 1/2	437	437 1/2	438	438 1/2	439	439 1/2	440	440 1/2	441	441 1/2	442	442 1/2	443	443 1/2	444	444 1/2	445	445 1/2	446	446 1/2	447	447 1/2	448	448 1/2	449	449 1/2	450	450 1/2	451	451 1/2	452	452 1/2	453	453 1/2	454	454 1/2	455	455 1/2	456	456 1/2	457	457 1/2	458	458 1/2	459	459 1/2	460	460 1/2	461	461 1/2	462	462 1/2	463	463 1/2	464	464 1/2	465	465 1/2	466	466 1/2	467	467 1/2	468	468 1/2	469	469 1/2	470	470 1/2	471	471 1/2	472	472 1/2	473	473 1/2	474	474 1/2	475	475 1/2	476	476 1/2	477	477 1/2	478	478 1/2	479	479 1/2	480	480 1/2	481	481 1/2	482	482 1/2	483	483 1/2	484	484 1/2	485	485 1/2	486	486 1/2	487	487 1/2	488	488 1/2	489	489 1/2	490	490 1/2	491	491 1/2	492	492 1/2	493	493 1/2	494	494 1/2	495	495 1/2	496	496 1/2	497	497 1/2	498	498 1/2	499	499 1/2	500	500 1/2	501	501 1/2	502	502 1/2	503	503 1/2	504	504 1/2	505	505 1/2	506	506 1/2	507	507 1/2	508	508 1/2	509	509 1/2	510	510 1/2	511	511 1/2	512	512 1/2	513	513 1/2	514	514 1/2	515	515 1/2	516	516 1/2	517	517 1/2	518	518 1/2	519	519 1/2	520	520 1/2	521	521 1/2	522	522 1/2	523	523 1/2	524	524 1/2	525	525 1/2	526	526 1/2	527	527 1/2	528	528 1/2	529	529 1/2	530	530 1/2	531	531 1/2	532	532 1/2	533	533 1/2	534	534 1/2	535	535 1/2	536	536 1/2	537	537 1/2	538	538 1/2	539	539 1/2	540	540 1/2	541	541 1/2	542	542 1/2	543	543 1/2	544	544 1/2	545	545 1/2	546	546 1/2	547	547 1/2	548	548 1/2	549	549 1/2	550	550 1/2	551	551 1/2	552	552 1/2	553	553 1/2	554	554 1/2	555	555 1/2	556	556 1/2	557	557 1/2	558	558 1/2	559	559 1/2	560	560 1/2	561	561 1/2	562	562 1/2	563	563 1/2	564	564 1/2	565	565 1/2	566	566 1/2	567	567 1/2	568	568 1/2	569	569 1/2	570	570 1/2	571	571 1/2	572	572 1/2	573	573 1/2	574	574 1/2	575	575 1/2	576	576 1/2	577	577 1/2	578	578 1/2	579	579 1/2	580	580 1/2	581	581 1/2	582	582 1/2	583	583 1/2	584	584 1/2	585	585 1/2	586	586 1/2	587	587 1/2	588	588 1/2	589	589 1/2	590	590 1/2	591	591 1/2	592	592 1/2	593	593 1/2	594	594 1/2	595	595 1/2	596	596 1/2	597	597 1/2	598	598 1/2	599	599 1/2	600	600 1/2	601	601 1/2	602	602 1/2	603	603 1/2	604	604 1/2	605	605 1/2	606	606 1/2	607	607 1/2	608	608 1/2	609	609 1/2	610	610 1/2	611	611 1/2	612	612 1/2	613	613 1/2	614	614 1/2	615	615 1/2	616	616 1/2	617	617 1/2	618	618 1/2	619	619 1/2	620	620 1/2	621	621 1/2	622	622 1/2	623	623 1/2	624	624 1/2	625	625 1/2	626	626 1/2	627	627 1/2	628	628 1/2	629	629 1/2
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## TRADE IN THE PHILIPPINES, COCHIN CHINA AND FEDERATED MALAY STATES.\*

*The following interesting advices in regard to features of trade in these countries have been received from John L. Sardy, who is making a business trip around the world.*

### THE PHILIPPINES.

TO an American traveler who has spent some months in Japan and China doing business indirectly with the natives, it is a relief to arrive in Manila and come in contact with American firms carrying on their business according to methods he is accustomed to. It is true there are plenty of Chinese shops, and some of them very good ones. For instance, there is a Hardware establishment (one among many) owned by a Chinaman, who has direct dealings with manufacturers in America and elsewhere. To look at his shop one would think his business a very small one, judging from the size of the establishment. Certainly it is not more than 25 ft. deep by 15 ft. wide, but that Chinaman has two or three warehouses filled with all kinds of Hardware, mostly American. He pays cash, understands his business, speaks good English and makes money.

Like all Eastern places, except in British India, the Chinaman among the natives is the man of business. The Filipino is not. He shows very little aptitude for commercial affairs and is the essence of laziness. The larger importing firms are American and in good times do a thriving business in all sorts of merchandise.

There are worse places in the world than Manila, but poorer hotels are scarcely conceivable. This is certainly un-Americanlike and will, no doubt, be remedied before long. In fact a scheme is on hand now to erect a suitable hotel building, and it is to be hoped it will be carried through. There is surely an opening for such an enterprise and, properly worked out, it should prove profitable.

### American Versus British Trade.

British interests are very considerable in the Philippines, but are declining since American occupation. As an instance, the Hemp trade is passing to the United States. At one time Great Britain took twice as much as we did, but now the figures show exactly the reverse. This is, no doubt, due to an act of Congress, admitting free of duty all products of the Philippines shipped direct to the United States for consumption there. Comparing American and British trade for the past 15 years shows the former has increased by about 50 per cent. and the latter declined to the same extent. Hemp, of course, is the great industry, and for the past five years has contributed more than two-thirds of the total trade of the islands. Sugar, copra and leaf tobacco follow next in importance among the exports, and although rice is largely cultivated, it still forms far and away the heaviest single item among the imports. The total imports in 1905 of manufactured articles amounted to nearly \$16,000,000, the United States easily leading as a source of supply, and of this American Hardware forms no inconsiderable part.

\* Mr. Sardy's article has had a curious adventure. His articles are written from notes taken on the spot in each country visited, the manuscript being completed at leisure later on. The manuscript for the accompanying article was completed in Bombay, being roughly written out in pencil on a pad ready to be typewritten, but as there was not time for this before leaving Bombay for Perth the author took it with him aboard the P. & O. S.S. Arcadia, changing at Colombo to the P. & O. S.S. Mongolia for Perth. When he arrived at the latter place and looked for the manuscript it was gone! He knew he had not left it at the hotel in Bombay, consequently it was lost either in the cabin of the Arcadia or the Mongolia. It seemed a hopeless case, as the manuscript itself was roughly written and looked as though it was something that had been discarded. Mr. Sardy determined to make an effort to recover it, and got the P. & O. agent in Perth to telegraph to Adelaide, where the Mongolia was, and at the same time cable to Hong Kong, where the Arcadia was supposed to be. A reply came from Adelaide that it was not found, but three days later a cable arrived from Shanghai, where the Arcadia had proceeded, that the manuscript had been found in the cabin which had been occupied by Mr. Sardy and saved, and upon his arrival in Melbourne he received it. The article was thus completed in India, its loss was discovered in Western Australia, it was found in China and finally reached the author in Melbourne. The actual distance traveled by the manuscript was close to 14,000 miles.

### Carelessness in Packing and Following Instructions.

Carelessness in packing and following instructions as to invoicing and bills of lading is a common complaint among the importers of American goods. Shippers from New York to the Philippines via San Francisco must bear in mind that the distance is over 10,000 miles. Across the Atlantic and through the Suez Canal the distance is also very great, to say nothing of the handling by either route and time required in transit. Cases should be strongly constructed and, above all things, iron strapped, this latter mainly to prevent theft. Instructions as to gross and net weight and the material out of which the manufactured article is made should be clearly stated. Regular importers always give full instructions so as to avoid custom house and other difficulties, but apparently in the rush of business the American manufacturer disregards these instructions and trouble results.

### Manila Custom House Facilities Excellent.

Coming to Manila for the first time, the traveler hears with pain of the trouble he will experience in the custom house with his baggage, and if by chance he should happen to have a collection of commercial samples, then woe betide him. All this, however, is quite groundless. He only has to tell the truth, and although he will find the Manila customs officers performing their duties, as they are bound to do, he will find them courteous and not needlessly exacting. In the case of commercial samples there is no custom house in the East where better facilities are afforded to enable the traveler to quickly obtain his tools of trade, and that, too, without custom expenses to amount to anything or deposit for duties, if an assurance be given that none of the samples are for sale. It is vastly different in custom houses in some other parts of the world, where the commercial traveler is put to no end of trouble unless he be prepared to oil the way.

### Railroad Interests.

There is only one railroad on the islands, the line from Manila to Dagupan. It is owned by a British company and well managed. This line is about 200 miles in extent and of course situated in the Island of Luzon. This does not include the Manila Electric Street Railway, which up to the present has only been used for passenger traffic, but recently a franchise has been granted to extend the line to Fort McKinley and the quartermaster warehouses, with a license to carry freight.

The earnings of the steam railroad have increased steadily from year to year, until now they have more than doubled since Spain relinquished the islands to Uncle Sam. Franchises have been granted for a further extension of the line and in time no doubt the work will be carried out, but times are bad in the Philippines and sufficient capital is not available there for the purpose.

### A Word as to Capital.

As for capital from the United States or abroad, the apparent uncertainty of the Washington government's attitude toward the islands has made investors shy, though why this should be is difficult to understand as there is hardly a doubt that Americans would so far forget their sense of duty to and the responsibility they have assumed toward the Filipinos as to give up and own their inability to carry out what the God of War has placed in their hands to do. Placed in our hands have been some 8,000,000 fellow creatures living upon 1200 islands, covering in all about 119,000 square miles and in a straight line from the most northern island to the extreme southern one in the group extending 1000 miles, and east and west over 500 miles, with a coast line of about 12,000 miles. We have never hauled down our flag and owned final defeat, so it may be hoped Old Glory will float forever over the Philippine Archipelago.

### COCHIN CHINA.

The traveler desiring to proceed to Singapore in the Straits Settlements from Manila has to take his chance

about a steamer, as there is no regular direct line, but cargo steamships with fairly comfortable accommodation for saloon passengers turn up at intervals. Should the vessel happen to be a French one of the Messageries Maritime Line, the traveler thereon will have an opportunity of lying at the port of Saigon in the French possession of Cochinchina for several days, while cargo is being discharged or taken on, thus enabling him to see one of, if not the most attractive place of its kind in all the East, bar the rain. Notwithstanding the comparatively small size of the place, somehow one is reminded of Paris, due perhaps to the numerous cafés, where the people sit in characteristic French fashion at tables in the open air beneath awnings and take their wine, beer or absinthe. The cleanliness of the place is striking and the beauty of the broad roads, shaded by lofty trees arching over head is equally striking. So is the opera house, an artistic edifice which cost several millions of francs to erect and is justly the pride and glory of the townsfolk.

#### Everything Is French.

Everything is French; there are only four Englishmen and one American—of course, a dentist—in the place, and the only American business establishment is a branch of the Standard Oil Company, under the management of a Scotchman. The hours for business are peculiar. The banks open at 7 and close at 10 in the morning, opening again at 2 and closing for the day at 4 in the afternoon. The shops or stores are open from 7 to 11 in the forenoon and 2 to 7 in the afternoon.

Very few American goods are used in Cochinchina. Scales and Wood Pulleys are imported, but a visit to Saigon Hardware establishments, of which there are a number, discloses scarcely anything else American. Naturally enough there are no end of Chinese in this French possession in China. In Chalon alone, a town 4 miles from Saigon, there are about 500,000 of them, and the Chinese boycott against things American is decidedly pronounced. As far as possible everything dealt in is French.

#### Canals the Medium of Transportation.

Transportation throughout the country is carried on by means of canals, of which there are many. Hence there is very little use for Wagons of American or any other make, except, of course, the everlasting Bullock Cart, which they construct themselves and manage to make the patient bullock pull about anywhere, for outside of towns like Saigon there are no roads, the ground being too wet and muddy. Plowing is done in the mud with the crude home made Plow pretty well under water, most if not all the time, but the rice grows, the people thrive, contentment is apparent and the rain falls on and on. It is said there are two seasons in Cochinchina, the wet one, when it rains all the time and the dry one, when it rains every day.

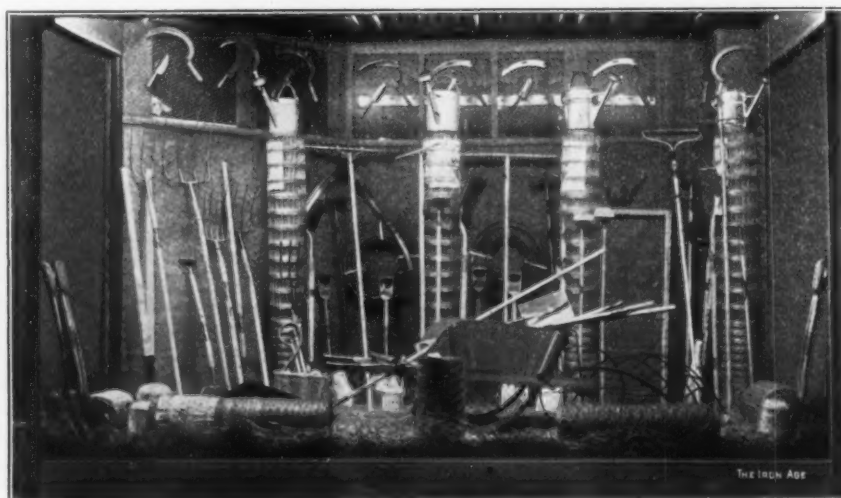
(To be concluded.)

THE HOFFMAN-CORR MFG. COMPANY is about to remove its New York City office and salesroom from 107 Duane street to 55 and 57 White street. Here the company will have larger quarters and better facilities in every respect for handling business in Twines, Hammocks, Nets, &c.

APPLICATION has been made for a Pennsylvania charter for the Builders' Hardware & Supply Company of Scranton, Pa. The incorporators are E. W. Ives, Mary B. Ives and Charles S. Teal, of Scranton.

#### GARDEN GOODS WINDOW DISPLAY.

AN attractive display of goods now in season is reproduced herewith. This window exhibit was prepared by the E. N. Howell Hardware Company, Dixon, Ill., which recognizes the value of this sort of store advertising and makes commendable use of its windows. The window shown is 12½ ft. in width. The back was covered with tan colored wall paper, over which various kinds of Poultry Netting were placed. The floor of the window was covered with hay. Garden Implements, Poultry Supplies, Spray Pumps, Hose and related goods occupied a place in the window. Life was given to the exhibit by a brood of chickens, which were allowed to roam about at will in the window. This feature, which



Garden Goods Window Display of E. N. Howell Hardware Company.

does not appear in the illustration, doubtless attracted the attention of many passersby, who might not otherwise have stopped to inspect the window. It will be noticed that Lawn Mowers are not shown. This important line was featured by itself in another window at the same time.

#### WOOSTER HARDWARE COMPANY'S ANNUAL SPRING OPENING.

THE tenth annual spring opening of the Wooster Hardware Company, Wooster, Ohio, was, as usual, very satisfactory to the members of the firm, bringing about many sales in all departments, and putting the firm and their salesmen in touch with prospective buyers in all the numerous lines handled. The visitor to the different departments could not help but be impressed with the size of the stock carried, and the many vehicles bearing cards containing the word "sold" gave mute proof that the salesmen had made many sales in this department. Sales in Farming Implements and Machinery were also very good, as well as in the general Hardware line. The opening this year, as heretofore, was attended by a large number of manufacturers' representatives, general agents, managers of territory and special salesmen of the concerns from whom the company buys goods, who gave valuable assistance to the firm in explaining the merits of their respective lines and effecting sales.

Bids are called for by the Navy Department, to be opened May 14, for a large amount of material, including a quantity of Hardware commodities and Metals. Particulars should be obtained from the Department, but the following requirements are noted: Railroad Spikes, Bolts, Nuts, Wood and Machine Screws, Steel Hull Rivets, Wire Rope, Brass Spring Wire, Tin Plates, Sheet Copper, Bronze Rods, Sheet Brazing Metal, Pneumatic Drills and Hammers, Sheet Brass, Bar Iron, Sheet Lead, Zinc Plates, Tool Steel, Galvanized Sheet Steel, Rolled Bronze, Angle Steel, Brass Rivet Rods, Drill Rods and Sheet Zinc.



## A National Pure Paint Law.

FROM OUR SPECIAL CORRESPONDENT.

WASHINGTON, D. C., April 30, 1907.

**T**HE campaign which has been vigorously waged during the past year to secure legislation in the interest of pure Paints has finally culminated in a movement to induce Congress to pass a national law on the subject, and a bill has therefore been drafted for introduction at the coming session. The sponsor of the measure is Representative Marshall of North Dakota, who has been prominent throughout this agitation and who is regarded as one of the most influential of the Northwestern Congressmen.

### Co-operation of the [Federal Government Necessary.

The decision to apply to Congress for the enactment of a comprehensive law is the result of the observation of the operation of State statutes having the same general object—namely, the enforcement of a standard of purity or quality and the labeling of goods in such a manner as to prevent the deception of the public. The experience with all State laws of this kind, and especially those dealing with the subject of pure foods and drugs, has demonstrated that without the co-operation of the Federal Government it is not possible to secure wholly satisfactory results. State laws have usually been found effective in preventing the manufacture or sale within the State of the prohibited goods, but inasmuch as the courts have uniformly held that the State Legislatures have no power to pass laws affecting interstate commerce it has been found impossible to prevent the shipment into the State direct to the consumer of goods made elsewhere which do not conform to local standards.

The enormous growth of the catalogue house business has emphasized the inadequacy of the State laws, for it has been found that the enactment of statutes prohibiting the sale of inferior products has operated to turn over a large amount of business to the mail order concerns, which, by selling inferior goods at reduced prices, are able to make serious inroads upon the business of reputable local merchants. The State authorities have endeavored to minimize this injurious influence by analyzing inferior catalogue house products and publishing the results far and wide, but this is recognized as only a partial remedy.

### Pure Food and Drugs Law the Model.

The bill which Mr. Marshall has drawn is designed to supplement State legislation by a federal enactment that will apply as rigidly to interstate commerce as the local laws now apply to the manufacture or sale within the States. The recent enactment by Congress of the so-called Federal Pure Food and Drugs law, which went into force on January 1 last, has turned attention sharply to the power of the Government to control interstate shipments, and Mr. Marshall has therefore taken the new law as a model for his pure Paint measure. There are reasons, some of which are obvious, why a statute designed to protect the health of the people is not in all respects appropriate to the objects which the pure Paint advocates have in view, and on this account Mr. Marshall's measure will probably be criticised as crude and in certain respects as decidedly drastic. The latter criticism will apply especially to a provision in the bill setting forth the products which may properly enter into the manufacture of Paints, which operates to condemn and exclude all other materials.

### Unwisdom of Enacting Paint Standards.

The critics of Mr. Marshall's bill, who strongly favor the principle upon which it is based, contend that no attempt should be made to enact Paint standards, which should be left to the determination of some recognized authority having the power to modify the regulations from time to time in accordance with the best technical practice and with a view to keeping the law in line with new discoveries, &c. The Pure Food and Drugs law does not attempt to provide standards, but under independent legislation the Secretary of Agriculture is au-

thorized to promulgate from time to time standards which may be fixed by a special commission, which, of course, has the power to rescind or amend its own regulations. Thus the statute is given the elasticity necessary to keep step with progress, and Congress is not required to legislate from time to time to prevent the statute from becoming antiquated.

### Summary of the Proposed Bill.

Section 1 of Mr. Marshall's bill makes it unlawful "for any person to manufacture within any Territory or the District of Columbia any white lead, paint or other compound intended for use as such, which is adulterated or misbranded within the meaning of this act," and provides that any violation of this provision shall be punishable by a fine not to exceed \$500 or one year's imprisonment or both.

By the second section of the bill it is made a misdemeanor to ship from one State to another or to a foreign country "any white lead, paint or compound intended for use as such which is adulterated or misbranded within the meaning of this act," and provides a fine not exceeding \$200 for the first offense, and for each subsequent offense a fine not exceeding \$300 or imprisonment not exceeding one year or both. A proviso to the second section stipulates that "no article shall be deemed misbranded or adulterated within the provisions of this act when intended for export or packed according to the specifications or directions of the foreign purchaser, when no substance is used in conflict with the laws of the foreign country to which said article is intended to be shipped; but if said article shall be in fact sold or offered for sale for domestic use or consumption, then this proviso shall not exempt said article from the operation of any of the other provisions of this act."

The Secretary of the Treasury, the Secretary of Agriculture and the Secretary of Commerce and Labor are authorized by Section 3 to make uniform rules and regulations for carrying out the provisions of the act, "including the collection and examination of white lead, paint and compounds intended for use as such," &c.

### Examination of Samples and Hearing.

A method of examination of samples and a hearing for the manufacturers thereof are provided by Section 4 of the bill, which is as follows:

That the examinations of such specimens shall be made in the Bureau of Chemistry of the Department of Agriculture, or under the direction and supervision of such bureau, for the purpose of determining from such examinations whether such articles are adulterated or misbranded within the meaning of this act; and if it shall appear from any such examination that any of such specimens is adulterated or misbranded within the meaning of this act, the Secretary of Agriculture shall cause notice thereof to be given to the party from whom such sample was obtained. Any party so notified shall be given an opportunity to be heard, under such rules and regulations as may be prescribed as aforesaid, and if it appears that any of the provisions of this act have been violated by such party then the Secretary of Agriculture shall at once certify the facts to the proper United States District Attorney, with a copy of the results of the analysis or the examination of such article duly authenticated by the analyst or officer making such examination, under the oath of such officer. After judgment of the court, notice shall be given by publication in such manner as may be prescribed by the rules and regulations aforesaid.

Section 5 makes it the duty of each district attorney to whom the Secretary of Agriculture shall report any violation of the act to cause appropriate proceedings to be commenced for the enforcement of the penalties provided by law.

### "Adulterated" and "Misbranded" Defined.

The terms "adulterated" and "misbranded," as applied to Paints, &c., are defined by sections 6 and 7 as follows:

That for the purposes of this act any Paint, or compound intended for use as such, shall be deemed to be adulterated which contains other ingredients than pure Linseed Oil, pure Carbonate of Lead, Oxide of Zinc, Turpentine, Japan Dryer and pure colors.

That the terms "misbranded," as used herein, shall apply to any Paint, or compound intended for use as such, the package or label of which shall bear any statement, design or device regarding such article, or the ingredients or substances contained therein, which shall be false or misleading in any particular, and to such product which is falsely branded as to the State,

Territory or country in which it is manufactured or produced. That for the purposes of this act an article shall also be deemed to be misbranded:

1. If it be an imitation of or offered for sale under the name of another article.
2. If the contents of the package as originally put up shall have been removed, in whole or in part, and other contents shall have been placed in such package, or if the package fails to bear a statement on the label of the quantity or proportion of each ingredient contained therein.
3. If in package form, and the contents are stated in terms of weight or measure, they are not plainly and correctly stated on the outside of the package.
4. If the package containing it or its label shall bear any statement, design or device regarding the ingredients or the substances contained therein, which statement, design or device shall be false or misleading in any particular.

#### Retailers Exempt from Prosecution.

Section 8 is a provision of great importance to the retailer of Paints, Varnishes, &c. Following the lines of the Pure Food and Drugs law it provides that any one selling a product under the manufacturer's written guaranty is exempt from prosecution should the product be found not to comply with the provisions of the act. This section is as follows:

That no dealer shall be prosecuted under the provisions of this act when he can establish a guaranty signed by the wholesaler, jobber, manufacturer or other party residing in the United States, from whom he purchases such articles, to the effect that the same is not adulterated or misbranded within the meaning of this act, designating it. Said guaranty, to afford protection, shall contain the name and address of the party or parties making the sale of such articles to such dealer, and in such case said party or parties shall be amenable to the prosecutions, fines and other penalties which would attach, in due course, to the dealer under the provisions of this act.

#### Confiscation and Condemnation Conditions.

Section 9 prescribes the conditions under which the Federal authorities may confiscate and condemn adulterated or misbranded goods. It is as follows:

That any Paint, or compound intended for use as such, that is adulterated or misbranded within the meaning of this act, and is being transported from one State, Territory, District or Insular possession to another for sale, or, having been transported, remains unloaded, unsold or in original unbroken packages, or if it be sold or offered for sale in the District of Columbia or the Territories or Insular possessions of the United States, or if it be imported from a foreign country for sale, or if it is intended for export to a foreign country, shall be liable to be proceeded against in any district court of the United States within the district where the same is found, and seized for confiscation by a process of libel for condemnation. And if such article is condemned as being adulterated or misbranded, or of a deleterious character, within the meaning of this act, the same shall be disposed of by destruction or sale, as the said court may direct, and the proceeds thereof, if sold, less the legal costs and charges, shall be paid into the Treasury of the United States, but such goods shall not be sold in any jurisdiction contrary to the provisions of this act or the laws of that jurisdiction. Provided, however, that upon the payment of the costs of such libel proceedings and the execution and delivery of a good and sufficient bond to the effect that such articles shall not be sold or otherwise disposed of contrary to the provisions of this act or the laws of any State, Territory, District or Insular possession, the court may by order direct that such articles be delivered to the owner thereof. The proceedings of such libel cases shall conform, as near as may be, to the proceedings in admiralty, except that either party may demand trial by jury of any issue of fact joined in any such case, and all such proceedings shall be at the suit of any in the name of the United States.

Section 10 of the bill provides that its prohibitions and administrative features shall apply to foreign goods that may be imported into the United States. Section 11 extends the jurisdiction of the measure over all insular possessions of the United States and section 12 provides that the act shall take effect six months after the date of its passage and approval.

As already indicated, the Marshall bill is regarded in certain quarters as crude and drastic, but in view of the strength of the movement now on foot to secure such Federal legislation it is certain that the subject will receive a great deal of attention in both houses of Congress at the coming session. It is recognized that the undertaking is by no means easy of accomplishment, and in this connection it is remembered that the Pure Food and Drugs bill was pending for 16 years before it finally became a law.

W. L. C.

B. L. Billingsley has succeeded Johnson & Billingsley in the Hardware business at Paris, Texas.

### THE REPUBLIC METALWARE COMPANY.

THE REPUBLIC METAL WARE COMPANY, formerly at 21 Cliff street, New York, is now established in its new quarters at 88 Warren street, where there are three floors, each 25 x 100 ft., including street floor and two basements. The premises will be fitted up solely for displaying and selling goods from the immense lines of Housefurnishing and Kitchen Utensils made by the company, the business of which was established in 1836, at Buffalo, N. Y. No stock is now carried in Manhattan, as formerly, but an entire floor, the sixth, has been taken in building No. 2 of the Bush Land Company, at the foot of Thirty-eighth street, Brooklyn, on New York Bay. The significance of this movement is that the company can get carload freight from the Buffalo factories now in about four days, while the 45,000 sq. ft. of space in a building 75 x 600 ft. enables it to carry an adequate stock from which to make prompt deliveries. As now organized, city or near-by orders received in the morning can be delivered in the afternoon of the same day and late afternoon orders can be delivered the next morning from the Warren street address. There is no trucking or unnecessary handling from cars direct from factory, other than the taking of goods from cars unloaded at the warehouse doors and delivered by means of freight elevators of 3 tons capacity each on the company's floor. This means that innumerable goods of a bulky nature, such as Hods, Washtubs, Cans, Pipe, &c., arrive in fine order and quickly, instead of being delayed, as heretofore in the case of isolated cars, the contents of which had to be handled several times between the New Jersey terminal and the warehouse, suffering in appearance from each handling.

Goods consigned to the Republic Metalware Company, or any other tenants of these new factory and warehouse buildings, are picked up in carloads by the Bush Terminal Company on floats from sidings set apart for it at any of the many railroad and boat terminals every day and the cars ferried to this immediate location, when the cars are delivered to the various buildings direct for immediate unloading. Outward shipments are similarly handled, the goods in shipping order being turned over to the Bush Terminal Company, and by it transported to any of the shipping lines for any part of the world, by land or water. Such goods as are destined for the Warren street store have the advantage of a greatly improved municipal ferry service between Brooklyn and Manhattan.

### MORLEY BROTHERS' CATALOGUE.

MORLEY BROTHERS, Saginaw, Mich., jobbers of Hardware, Saddlery and Sporting Goods and manufacturers of Harness, Horse Collars, Easy Rolling Shelf Ladders and Blue Line Lumbering Tools, now have their new general Hardware catalogue ready for distribution. This book, which weighs about 6 lb., is 11 x 11½ in. in size and contains 1420 pages, and the house considers it the most complete that it has ever published. It is printed on good quality paper, and care has been taken to have all cuts represent clearly the goods illustrated. A discount sheet has been issued for everything shown in the catalogue, which it is expected will prove a great convenience for merchants, as they often have calls for goods which they do not carry in stock and cannot sell unless they have some idea as to the price.

The lines referred to in the catalogue include Builders' Hardware, Miscellaneous Hardware, Agricultural and Construction Tools, Lanterns, Lamps, Oilers, &c., Mechanics' Tools, Pipe Fittings, Hose, Belting, &c., Paints, Oils, Varnishes, Brushes, &c., House Furnishing Goods, Wooden Ware, Tinware and Stoves, Bolts, Screws and Heavy Hardware, Cutlery, Silverware, Watches, Clocks, Cut Glass, &c., Fishing Tackle, Guns, Ammunition, Sporting Goods, Bicycles and Sundries, Saddlery Hardware and Harness.

Owing to inadequate facilities at its present quarters, the Chelan Hardware & Furniture Company, Chelan, Wash., is erecting a two-story brick building, 27 x 105 ft., which will be completed within a short time.



## Export Trade Topics.

### PRACTICAL SUGGESTIONS ON EXPORT TRADE.

#### Third Article.—Invoicing, Bills of Lading, Etc.

**E**XPORT invoices, also, should usually be written in triplicate, one copy to accompany each of two duplicate bills of lading, the extra copy to be sent direct to customer when (as is usual) the bills of lading are forwarded to him through a bank. Invoices should show marks in full, and all details of the shipment, as usual, in domestic documents of this sort, but in addition must never fail to indicate clearly and specifically in what particular case each item of the shipment will be found packed.

Shipments to certain Central and South American countries require special documents in Spanish called consular invoices, whose nature must be studied by manufacturers interested. They usually involve attention by somebody in New York, which calls for an export department, or, in the case of out of town manufacturers, either a New York office or a suitable connection in New York; questions which will have consideration later on.

#### In Making out Invoices

leave absolutely nothing to "guess work" on the part of your customer. Use no abbreviations in the description of the various items, and, above all, no trade or technical names for goods that are purely American, or local, or peculiar to the individual manufacturer. This is particularly necessary when goods and invoices go to foreign customers whose native language is not English. No matter if a foreign customer has a good English correspondent it may be set down as certain that he will be completely puzzled over abbreviations that are the common practice of American invoice clerks. And just as the customer probably handles many sorts of goods unknown to the American manufacturer even by name, so the latter will be wise in assuming that the simplest, most elementary terms in his invoice will only be intelligible to the customer.

Prices, extensions and footings, if in dollars, should be indicated by our familiar sign (\$)—not left as they often are in blank, mere figures for the foreigner to puzzle out, for his thoughts run in some other currency than dollars. When discounts are deducted they should be so clearly shown and expressed that the customer unfamiliar with our abbreviated methods need not waste hours in guessing what it all means. When possible to do so it is frequently a great convenience to foreign customers to have items of an invoice refer clearly to pages or cuts in the manufacturer's catalogue. In short, the invoice clerk should treat foreign customers precisely as though they had never seen or heard of any similar goods. Even old customers familiar with the goods for years will not infrequently bless him for the improvement.

#### Shipper's Manifest.

Before shipping goods abroad it is necessary for the shipper or his authorized representative to appear in person at the custom house of the port of shipment and make oath as to the nature, quantity and value of the goods to be shipped, their destination, &c., on forms legally specified for this purpose, available at many stationers who especially cater to exporting firms. This formality also requires either a proper export department in the establishment of the manufacturer or suitable New York connections.

#### Shipping.

The procedure of the manufacturer in the interior of the United States when he has an export shipment to make begins with his local railroad. His railroad policy, receipt, bill of lading, whatever name may be locally applied to it, should be clearly marked "For Export." This will provide, when the goods reach New York, for the 20 days' free storage accorded as a privilege to all goods

intended for foreign shipment, as distinguished from domestic goods, which must be removed from station of arrival within two days. Thus ample time is usually allowed to put the goods on board any desired steamer.

Freight to New York should invariably be prepaid whether or not it is charged on the invoice. A vast amount of time, annoyance and red tape in New York freight offices is saved by so doing. Whenever possible goods should be forwarded to New York in carload lots. Even if the manufacturer has only a fraction of a carload for any one customer, if he can combine a carload shipment of export goods for many different customers a great economy will be effected. In New York harbor carload shipments are entitled to free lighterage alongside of steamers, even if the goods in the car have to be divided among several different ships. And truckage in New York is expensive; in the case of some small shipments almost prohibitive.

#### The Choice of the Ocean Route

by which to despatch a foreign shipment may be influenced not only by such ordinary considerations as time required in transit, the freight rate demanded, &c., but by other and more unusual questions that will probably be quite unforeseen by the manufacturer taking his first steps in export business. He may find, for example, that in shipments of large value to China some importers in that country prefer to pay for transcontinental railroad and Pacific steamship service in view not only of the earlier arrival of the goods but of the saving of interest over the slower if cheaper service from Atlantic ports via the Suez Canal.

If the manufacturer does business with France he will find that a differential duty is charged in that country and that goods arriving by "direct" ships pay sufficiently lower duties to more than offset the higher rates of freight demanded by such steamers than are available by "indirect" vessels. Sometimes, in the South African or Australian trade, for instance, there exist "shipping combines," or contracts are possible with certain lines which provide for rebates on the amount of freight paid in the course of a year, provided the shipper's business has been absolutely restricted during the period to the line in question.

It will usually be found that importers in countries so affected are perfectly familiar with ruling conditions and will expect their suppliers to turn over to them at the end of the year all rebates thus obtained; will usually strenuously insist upon it because their competitors enjoy those rebates, and they also must have them in order to work on even terms. That this is not always a small matter may be illustrated by the fact that a certain house in one such country recently realized the sum of \$3000 from rebates on its previous year's shipments.

#### Importance of Bills of Lading.

Many American manufacturers fail to realize the intrinsic value and importance of an ocean bill of lading. In the case of country manufacturers this very likely results from the loose practice that prevails in many of our smaller interior cities in regard to railroad policies or bills of lading. Both in the case of railroad and of ocean bills of lading that document is supposed to cover the title to the goods represented. In the city of New York consignees of goods cannot obtain delivery of those goods except by the presentation to the delivering railroad company of the receipt, policy or bill of lading issued upon their shipment, duly endorsed to their truckman or other representative. In some interior cities, particularly smaller towns where every one knows every one else, it is quite customary for railroad employees to deliver goods without the requirement of any formalities whatever.

Whatever the cause may be, it is certainly a fact that many manufacturers do not know what to do with their steamship bills of lading. The owner of an ocean bill of lading is alone entitled to the goods it represents, and no one, in any part of the world, can obtain possession of those goods without presenting the original bill of lading drawn in their name or endorsed to them, or giving a bond equal at least to the supposed value of the

goods to indemnify the ship's agents against other parties who may present such bill of lading and claim the goods. Hence an ocean bill of lading is a vitally important document, and the more valuable, as it is impossible, readily and quickly, to obtain duplicates from sources thousands of miles distant.

#### Ocean Bills of Lading May be Drawn

to indicate delivery direct to the customer by name, but the usual habit is to draw them for delivery "to order." In the latter case the goods represented remain the property of the shipper in whose name receipt by the ship is acknowledged. To make it possible for any one else to obtain these goods the shipper must indorse the bill of lading. Such indorsement may either be directly to specific persons or in blank. In other words, such a bill of lading is treated very much like an ordinary check, and in one case as in the other, indorsement in blank signifying payable to bearer.

From the foregoing it is clear that bills of lading must in some fashion reach the consignees of the goods, must be in such form as to insure delivery to them, and should arrive at least as soon as the goods themselves in order to avoid storage charges in foreign ports. How to handle and forward the bill of lading is a question that will be explained under another heading.

#### To Insure Notification of Consignee.

Even when a bill of lading is drawn for delivery "to order" it is quite customary to insert the phrase "notify Messrs. ———." And in all cases where goods have to be transhipped in transit it is a good plan to note on the bills of lading in a prominent place, where it is not likely to be overlooked, some indication similar to: "Transshipping agents please notify Messrs. ——— of ——— name and date of transshipping steamer." The object of both of these notations is to advise the consignee or the holder of the bill of lading of the arrival in port of his goods.

As has been observed, shipping marks are usually and properly very blind. Unless the ship's agents at port of destination happen to know to whom similar marks belong, the consignee will remain ignorant that the ship bringing his goods has arrived in port, particularly if the goods have been transhipped out of the original vessel into some other ship, name and sailing unknown. But nonnegotiable copies of the bill of lading accompany the goods into the hands of the ultimate ship's agents at port of destination, who are thus able to identify them. Hence the convenience of the notations indicated.

#### The Number of Identical Bills of Lading

that must be written for each shipment varies with the rules of the different steamship companies. The shippers themselves usually require two negotiable and two non-negotiable bills for their own use, and in addition the steamship people will require from one to three copies for themselves, always boldly marked "nonnegotiable" of course. All copies should be so stamped on their face except the two (sometimes three) that are required by the shippers as valuable documents, usually employed for banking purposes.

Merely stamping one (or two) of the negotiable bills "copy" does not affect the negotiable value. The two nonnegotiable bills taken by the shippers themselves usually serve, the one for their own office files, the other for the information only of the foreign customer in case of necessity, and is sometimes mailed direct to him, irrespective of the course taken by the negotiable bills. But in all cases of doubt it is better not to put the consignee into possession even of a nonnegotiable bill that conveys no title to the goods, for it might be utilized in some manner to obtain the goods themselves in ways unauthorized by the shippers. The safe rule to follow in the case of ocean bills of lading is to treat each one as you would a check on a bank.

(To be continued.)

W. H. Miller has bought the retail Hardware business of Updyke & Gaylord, Oswego, Ill., and will continue at the old stand.

#### REQUESTS FOR CATALOGUES, &c.

*The trade is given an opportunity in this column to request from manufacturers price-lists, catalogues, quotations, &c., relating to general lines of goods.*

**REQUESTS for catalogues, price-lists, quotations, &c., have been received from the following houses, with whom manufacturers may desire to communicate:**

FROM THE ENTERPRISE, East Boston, Mass., H. Barron, proprietor, which will carry a full line of Hardware and Kitchen Furnishing Goods.

FROM FREIDELL-LACHER HARDWARE COMPANY, Hammondsport, N. Y., who have bought out the Hardware, Stove, Plumbing, Paint and Implement business of Geo. H. Keeler.

FROM KIGHT-HALL HARDWARE COMPANY, successor to F. M. Kight, Prairie City, Ore., conducting a retail business in Shelf and Heavy Hardware, Stoves, Tinware, Agricultural Implements, Paints, Oils, Sporting Goods, Wagons, Spring Work, Gasoline Engines, Building Material, &c.

FROM GARRETT-GIBSON HARDWARE COMPANY, Aquilla, Texas, which has been incorporated with capital stock of \$8000, carrying a retail stock of Shelf and Heavy Hardware, Stoves, Tinware, Agricultural Implements, Paints and Sporting Goods. The company will erect a building 30 x 50 ft. in size, and will use the present store as a wareroom.

FROM RUSTAD HARDWARE & PLUMBING COMPANY, 108 Second avenue, South, Seattle, Wash., doing a retail business in Shelf Hardware and Plumbing Goods.

FROM H. H. MARTIN, who has bought out the Manheim Lumber & Hardware Company, Manheim, Pa.

FROM WILTON-NICHOLAS HARDWARE COMPANY, which has been incorporated with an authorized capital of \$50,000 to take over the business of J. Wilton & Sons, Harrisonburg, Va.

FROM WRIGHT HARDWARE COMPANY, San Francisco, Cal., which has resumed business in a brick building at 77 Third street, directly opposite its former quarters, having fitted up the interior of its store in an attractive manner. The company will make a specialty of Builders' Hardware and Mechanics' Tools, the same as formerly carried. While it might have been able to resume last fall, the company preferred to wait until it could re-establish itself advantageously and in a location that would be permanent.

FROM MATTHEWS HARDWARE & IMPLEMENT COMPANY, Camden, Ala., B. H. Matthews, president, which will on May 15 take over the stock and good will of Camden Hardware Company. The new concern will be capitalized at \$10,000.

SETH R. ABRAMS on May 1 retired from the service of the American Trading Company, 25-33 Broad street, New York, and will spend the next six months enjoying a well earned vacation on the advice of his physician, at the end of which it is his present purpose to take up some business of a similar character. Mr. Abrams began business life as an office boy 33 years ago with the Hon. William J. Coombs, who founded the export business of Coombs, Crosby & Co., then at 57 Beekman street, Mr. Coombs being one of the pioneers in exporting, the house later becoming successively Coombs, Crosby & Eddy, Flint, Eddy & Co., and Flint, Eddy & American Trading Company, until the present title was adopted. Mr. Abrams has filled almost all positions in the business up to general manager of the office and has long been manager of the African and Australian departments in the present American Trading Company.

H. W. Wickenhiser has succeeded the Hardware, House Furnishing Goods and Paint firm of Wickenhiser & Harman, Coraopolis, Pa.



## PRICE-LISTS, CIRCULARS, Etc.

Manufacturers in Hardware and related lines are requested to send us copies of catalogues, price-lists, &c., for our Catalogue Department in New York; and at the same time to call attention to any new goods or additions to their lines, of which appropriate mention will be made, besides the brief reference to the catalogue or price-list in this column.

H. M. QUACKENBUSH, Herkimer, N. Y.: Illustrated price-list of Nut Picks and Cracks; catalogue of Air Rifles, Pistols, &c., and circulars referring to the new No. 6 Air Gun.

INDIANAPOLIS BRUSH & BROOM MFG. COMPANY, Indianapolis, Ind.: Illustrated catalogue of Brooms and Brushes for mills, foundries, factories and railroads.

UNION BOW COMPANY, Cleveland, Ohio: Illustrated catalogue No. 7, referring to an extensive line of Vehicle Bows and Cart Handles.

BIRDSSELL MFG. COMPANY, South Bend, Ind.: Handsome catalogues referring respectively to Wagons and Clover and Alfalfa Hullers.

KEYSTONE MINE SUPPLY COMPANY, Pittsburgh, Pa.: Catalogue and price-list No. 2, referring to Miners' Tools and Supplies, Oils, Greases, &c.

SIMMONS HARDWARE COMPANY, St. Louis, Mo.: Illustrated catalogues Nos. 535, 536, 537 and 538, referring respectively to Leader Baby Carriages, Banner Baby Carriages, Laclede Bicycles and Spring Sporting Goods, Fishing Tackle, &c.

CENTRAL STAMPING COMPANY, 24 Cliff street, New York: Illustrated catalogue and price-list of Sterling Aluminum Enameled Ware.

ROCHESTER SPRAY PUMP COMPANY, Rochester, N. Y.: Illustrated booklet referring to Sprayers, Atomizers, Kant-Klog Nozzles and Spring Hose Cocks.

J. W. JOHNSON COMPANY, Chicago, Ill.: Illustrated catalogue No. 39, with accompanying price-list, referring to Horse Clothing, Robes, Aprons, Feed Bags, &c.

MERRIAM MFG. COMPANY, Durham, Conn.: Catalogue and price-list of Cash and Bond Boxes, Bill and Change Boxes and other Stationers' Tinware.

WHITMAN & BARNES MFG. COMPANY, Chicago: Illustrated catalogue and price-list No. 62, referring to Diamond High Speed Twist Drills and Reamers.

ATWOOD MFG. COMPANY, Amesbury, Mass.: Illustrated catalogue No. 18, referring to Motor Car Lamps, Searchlights, Generators, &c.

CHARLES F. ORVIS, Manchester, Vt.: Illustrated catalogue No. 25, with accompanying booklet, referring to an extensive line of Rods, Reels, Flies and Fishing Tackle and the Orvis Minnow Trap.

BAUGH & SONS COMPANY, Philadelphia, Pa.: Baugh's Farmers' Almanac for 1907, containing a quantity of useful information about days, dates, crops and Fertilizers.

JOHN PHILLIPS & Co., Detroit, Mich.: Illustrated catalogue of Phillips' Silent Salesman Show Cases, Wall Cases, Counters and Store and Office Furniture; also circulars referring to Metal Store Front Bars.

CINCINNATI BELL FOUNDRY COMPANY, Cincinnati, Ohio: Handsome illustrated catalogue of Blymyer Bells for churches, schools, fire alarms, &c., containing many appropriate quotations from literature and a number of fac-simile testimonial letters.

The Crawford-Goff Hardware Company, Graham, Mo., has recently been incorporated with a capital stock of \$10,000, of which \$7000 has been paid in. The incorporators are J. H. Crawford, C. E. Goff, Louis D. Bose and W. E. Crawford.

J. F. Austin & Son, Georgetown, Ill., have sold their Hardware, Stove, Paint and Vehicle business to C. M. Goff.

A. McGovney has bought the Hardware, Stove and Paint business of W. R. Cline, Pueblo, Colo.

## MISCELLANEOUS NOTES.

## Art Inlay Stove Boards.

The Wabash Screen Door Company, 1120-1123 Marquette Building, Chicago, Ill., is offering for the first time art inlay (mother of pearl) stove boards, both wood and paper lined, square and oblong, in regular sizes. They are made of IC and IX selected coke tin plates. The mother of pearl effect is new and is designed, it is stated, to supply the demand for a better stove board than has heretofore been offered the trade. The metal surface is enameled tin plate, the durability of the enamel being fully guaranteed by the company. It is stated that there is no possibility of the metal surface being made worthless by rust or corrosion, as, should the enamel be entirely removed, there is left a perfect crystallized tin plate surface, which is impervious to heat or moisture.

## Oneida Community's Hammock Chains.

Oneida Community, Oneida, N. Y., New York office 395 Broadway, has put on the market hammock chains, to each end of which are hooks for adjustment to length. It is claimed that the chain is much stronger than rope, and it has been actually tested to the weight of five heavy men. In fact, the tensile strength of the chain is estimated at 1500 lb. Its safety is one of the points emphasized. There is no danger of rust, as the chain is heavily galvanized. It is said to be very easy of adjustment, and to hold firmly without slipping. Merchants are supplied with free samples and attractive hangers for display. Chains are furnished in three lengths, known as short, medium and long. The lengths are 3, 6 and 9 ft., respectively. They are boxed attractively, each box containing a single set. The article makes a convenient shelf package.

## Aluminum Coated Conductor Pipe, Eaves Trough, Etc.

Reeves Mfg. Company, Canal Dover, Ohio, is putting on the market a new line of aluminum coated conductor pipe, eaves trough, elbows and shoes, &c., which it declares to be rustproof, not affected by acid fumes and requiring no painting. It is also declared that the product will solder freely and will double seam without scaling. The company claims for these goods the rustproof qualities of aluminum and the wearing qualities of copper, although they cost about one-third as much as copper, and puts them out with the guarantee to replace them if they rust out at any time within 20 years.

## Midget and Eclipse Watches.

Robert H. Ingersoll & Bro., 51-53 Maiden lane, New York, who market great quantities of moderately priced watches, one of which, the "Yankee," retails for \$1, have just brought out several new types, two styles of cases



Fig. 1.—Midget Watch; Rococo Case.



Fig. 2.—Sterling Silver Case, Showing Damaskeened Movement Plate.

being here illustrated. Fig. 1 represents one of their Midget ladies' watches, Rococo case, slightly larger than No. 6 size, Fig. 2 being a view of a sterling silver case

of the same grade of movement, illustrating a damaskeened movement plate. The Midget Rococo is a reproduction of French models. There are no loose stems, no protruding backs, and the movement can be expeditiously removed for repair. The case has snap back and bezel, without an inside cap, and it may be obtained in three patterns, two of which are now ready for delivery, the other being expected within a month. The sterling silver case, Fig. 2, is as the name implies .925 fine. There is also a Midget five-year guaranteed gold filled case, the material of which is made of two plates of gold over a composition shell. The case has engraved ornamentation on back, with beaded bezel and beaded



Fig. 3.—Eclipse Watch, Engine Turned Case. Fig. 4.—Same Watch Showing Damaskeened Movement Plate.

center, both back and bezel being jointed and without inside cap. This case and the sterling silver case referred to are manufactured by the Illinois Watch Case Company, Elgin, Ill., the guarantee of which is given with each case in addition to the regular Ingersoll guarantee. Both watches described have damaskeened movement plates, porcelaine dials, antique bows and pendants, and have both stem wind and stem set. The Eclipse watch, Figs. 3 and 4, No. 16 size, has solid German silver case, specially finished movement, nickel hand poised balance, solid movement plate, nickel damaskeened plate, new patent invisible hinge; there being an option on fancy engraved or engine turned cases. The metal cases have metal dials. This style of watch can be profitably retailed at \$1.50 each.

#### Arnold Fountain Safety Razor.

The accompanying cuts represent the Arnold fountain safety razor, made by the Arnold Safety Razor Company, Reading, Pa. Fig. 1 shows the tool closed and ready to be carried in the vest pocket, a convenient feature to which attention is especially directed by the company. Fig. 2 shows the open razor, with the blade holder and the package of double edge blades which are carried in



Fig. 1.—Arnold Safety Razor, Closed.

the cap. To use the tool it is only necessary to slip off the cap containing the blades, unscrew and reverse the blade holder, insert the blade in holder according to directions and screw it tight at the base. It is declared that this operation takes only a few seconds, but as one blade is ordinarily left in the holder ready for use, the time usually required is considerably reduced. Twelve double edge blades go with the razor, and 10 extra blades cost but 50 cents. It is said that on the average beard one of these blades is good for 50 shaves, which would make the original dozen last a long period of time. Besides the advantages already suggested, it is also urged in favor of this razor that it combines the advantages of a safety razor with those of the usual type, as it can be held at any angle and used with a diagonal stroke, while it also enables the user to do close work about the so-called

corners of the face. At the same time the protection afforded to the blade is said to be such that a man can use it on an express train or rolling steamer with abso-

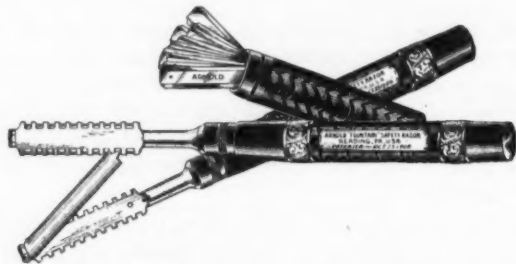
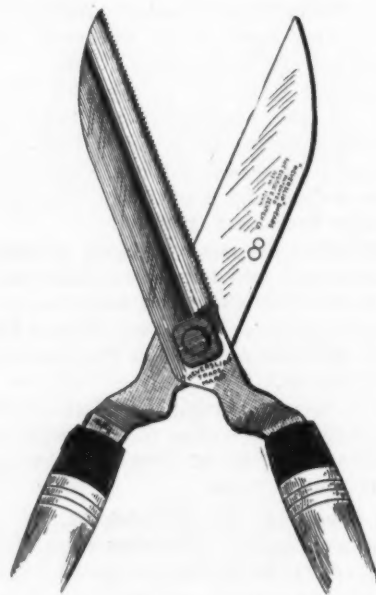


Fig. 2.—Arnold Safety Razor, Open, Showing Blades and Blade Holder.

lute safety. Under the manufacturer's system of selling, the razors are to be sold at retail, under agreement, for \$5 apiece.

#### Neverslip Hedge Shear.

The George E. Benton Company, 99 Reade street, New York, is offering the Neverslip hedge shear, shown in the accompanying cut. The feature of the tool is the serrated edge running the entire length of one of the blades. This slopes toward the point, so that the cutting blade as it passes along keeps it constantly sharp. It is claimed that this serrated edge grips the object to be cut while the other blade shears it off, making a clean



Neverslip Hedge Shear.

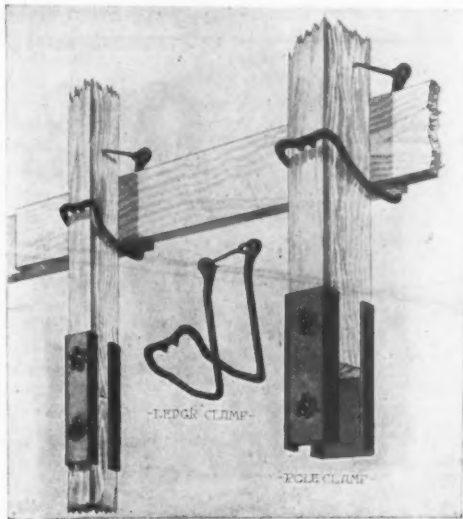
stroke, which leaves the hedge in excellent condition. In view of the fact that the shear is self-sharpening, the manufacturer states that the blades are well riveted together, thus avoiding the adjustment of a nut. The blades of the tool are hand forged and well polished, while the hardwood handles are 12 in. long and well tilted up, so that the hands of the user are not scratched or cut by the hedge. The shear is said to be well balanced and easy to operate. Three sizes are offered—8, 9 and 10 in.

#### Kingston's Ledger and Pole Clamps.

The Boston Bolt Company, 40 Farnsworth street, Boston, Mass., is offering the clamps shown herewith. The clamp is made of ½-in. steel and the pole clamp of No. 10 gauge steel. The devices are designed for use in building a staging outside or inside of a brick, stone or cement building, enabling the builder to do away with all nails,



splitting and breaking of ledger poles, while at the same time saving much time and expensive labor, which is involved in erecting a staging in the ordinary manner. The point is made that the devices are much cheaper to use for inside work than the old-fashioned horses, and at the same time make a much stiffer staging. When not in use they occupy less room and are handled much more quickly

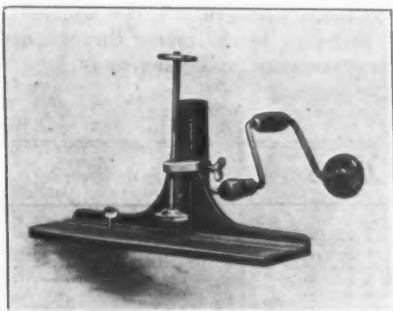


*Kingston's Ledger and Pole Clamps.*

than the old wooden horses. Tests made have clearly demonstrated that the clamps are of sufficient strength to sustain a far greater weight than they will probably ever be called upon to support in actual practice. It is remarked that after using the clamps a few times the staging can be erected and taken down with great facility.

#### **Lovett's Hand Doweling Machine.**

A device which is designed to be operated by hand power and suitable for all kinds of carpenter and cabinet



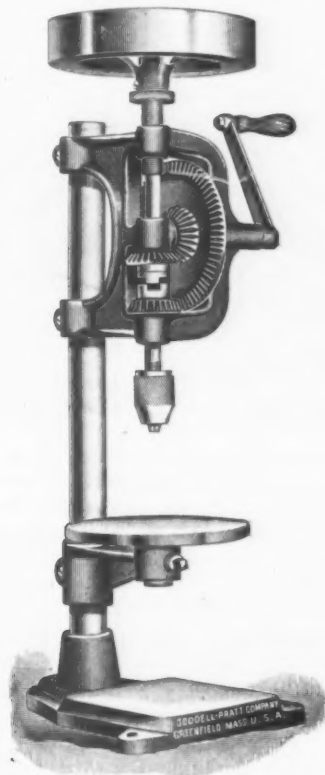
*Lovett's Hand Doweling Machine.*

work that is doweled together is shown in the accompanying illustration. The tool is so arranged that no centering of the material is necessary and it can be set to bore the center from  $\frac{1}{4}$  in. to  $2\frac{3}{4}$  in., with dowels  $\frac{1}{4}$ , 5-16,

$\frac{3}{8}$ , 7-16 and  $\frac{1}{2}$  in., without using any gauge, square or rule other than what goes with the tool. It can be set in an instant for any thickness of material and either auger or twist bits can be used, according to convenience. It can be used for doweling miters as well as square shoulders. The device can be screwed to the work bench or tall screw and weighs about 12 lb. William P. Walter's Sons, Twelfth and Market streets, Philadelphia, Pa., are offering the tool.

#### **Bench Drill [No. 72.**

The Goodell-Pratt Company, Greenfield, Mass., is putting on the market the new bench drill illustrated herewith. It is described as a strong, serviceable machine, weighing 50 lb.; having a tubular upright shaft, cut gears and two speeds. It is fitted with a three-jawed chuck, capacity 0 to  $\frac{1}{2}$  in.; provided with two tables, one oblong and stationary, the other round and swinging. The heavy balance wheel is turned and polished, making a bench drill of attractive design, practical construc-

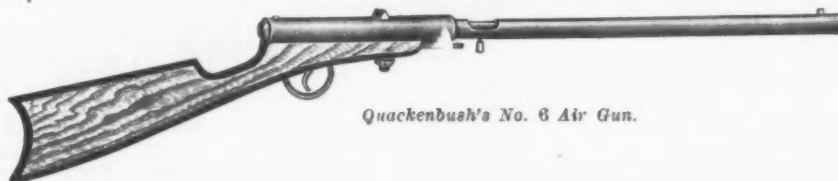


*Bench Drill No. 72.*

tion, and much utility. The extreme height of this machine is 27 in.; height to top of the tube,  $24\frac{1}{2}$  in.; extreme distance from round table to chuck,  $5\frac{1}{2}$  in.; extreme distance from rectangular table to chuck, 11 in.; diameter of round table, 7 in.; size of rectangular table, 6 x 7 in., and diameter of balance wheel, 7 in. The company also furnishes the same machine equipped with a double-acting vise in place of the round table, the vise being attached to the swinging arm, which can be thrown back out of the way when not in use.

#### **Quackenbush's No. 6 Air Gun.**

H. M. Quackenbush, Herkimer, N. Y., has added to his line of boys' arms the No. 6 air gun here shown. Its full length is  $39\frac{1}{4}$  in. and its weight 43 oz. All parts are made



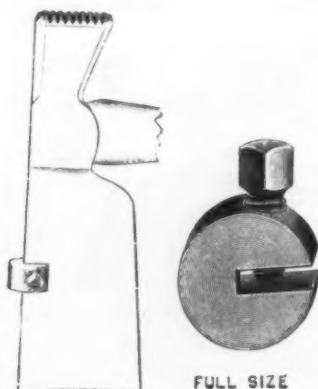
*Quackenbush's No. 6 Air Gun.*

of steel except the inner brass barrel and stock, which is of black walnut. No cast iron, solder or soft metal is used. Parts, if lost or broken, can be duplicated and easily replaced. The finish of the little gun is neat and substantial, the steel parts being dark blue and the wood stock oiled and varnished. It loads easily and quickly by pushing in the barrel, which cocks it and opens the breech for the insertion of the projectile. Sights and pull of trigger are adjustable. Six steel darts, three paper

targets and a wiping rod come with the gun. BB shot can be used in it if desired.

### Shingle Gauge.

L. A. Sayre & Co., Newark, N. J., manufacturers of hatchets, axes, mechanics' tools and numerous hardware specialties, are offering the shingle gauge illustrated in the accompanying cut. It is made of cold rolled steel,  $\frac{3}{4}$  x 7-16 in. in size, and is furnished with a set screw for



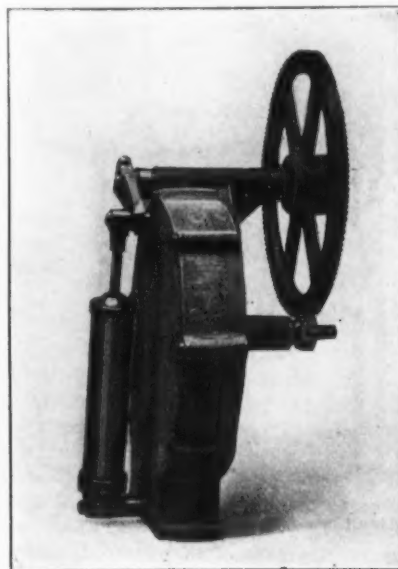
Shingle Gauge Attached and Detached.

fastening it to the blade of a lath hatchet as shown in the illustration. By its use it is possible to gauge the lap of shingles to  $4\frac{1}{2}$ , 5 and  $5\frac{1}{2}$  in., as desired. It can only be used with what are known as fancy patterns of lath hatchets, as the width of the slot will not admit blades of regular patterns.

### Lippincott Water Motor Air Pump.

Lippincott S. & M. Company, Newark, N. J., maker of the Lippincott Water Motor recently described in these columns, has now perfected an air compressor for use in connection with the motor in storing air for filling motor car tires, &c. An idea of the appliance may be obtained from the accompanying cut. It consists of a substantial cast iron casing in which rotates an impact wheel having a series of brass buckets attached to the rim. The water is admitted through a properly shaped nozzle, and strikes

the buckets with great force, causing a rapid rotation. The speed at an ordinary city pressure of 75 lb. is 2000 rev. per min. To the motor spindle is attached a cut pinion meshing with a cut gear as shown. This gear is carried by a shaft, on the opposite end of which is a crank, which actuates the air pump. The company states that it can furnish air cylinders of different diameters and gearing of a suitable ratio to adapt this device for



Lippincott Water Motor Air Pump.

any water pressure from 20 lb. upward. An automatic valve is provided to shut off the water supply when the desired air pressure in the tank is secured, and will begin to operate whenever the pressure is lowered from any cause. Any ordinary kitchen boiler may be used as an air reservoir, and a small pipe run from it to the curb line for pumping up tires without taking the auto to the garage, the automatic valve insuring the maximum pressure at all times. This pump will charge the largest size tank with air at 80 lb. pressure in a few moments. The water may be delivered to the motor through ordinary garden hose, or the motor and pump may be attached directly to any faucet.

## PAINTS, OILS AND COLORS

### Animal, Fish and Vegetable Oils—

Linseed, City, raw.....	42 @43
City, Boiled.....	43 @44
State and Western raw.....	40 @41
Raw Calcutta, in bbls.....	37 @38
Lard, Extra Prime, Winter.....	77 @78
Extra No. 1.....	56 @58
No. 1.....	50 @54
Cotton-seed, Crude, f.o.b. mills.....	35 @36
Summer Yellow, Prime.....	46 @46½
Summer White.....	50 @51
Yellow Winter.....	50½ @51
Sperm, Crude.....	59 @60
Natural Winter.....	72 @73
Bleached Winter.....	75 @76
Bleached Winter, Extra.....	@
Tallow, Prime.....	61 @62
Whale, Crude.....	35 @36
Natural Winter.....	46 @47
Bleached Winter.....	48 @49
Extra Bleached Winter.....	50 @51
Menhaden, Brown, Strained.....	32 @33
Light Strained.....	32 @33
Northern.....	@
Southern.....	@
Cocoonut, Ceylon.....	94 @94½
Cochin.....	94 @94½
Cod, Domestic, Prime.....	37 @38
Newfoundland.....	40 @42
Red, Elaine.....	47 @50
Saponified.....	67 @70
Olive, Italian, bbls, Yellow.....	85 @90
Neatsfoot, Prime.....	56 @57
Palm, Logos.....	7 @7½

### Mineral Oils—

Black, 29 gravity, 25@30 cold test.....	11½ @12
29 gravity, 15 cold test.....	12½ @13½
Summer.....	11½ @12
Cylinder, light filtered.....	19 @20
Dark, filtered.....	16½ @17½
Paraffine, 805-907 gravity.....	11 @14½
803 gravity.....	13 @13½
883 gravity.....	10½ @11½
Red.....	13 @14½

### Miscellaneous—

Barytes:	
White, Foreign.....	1 ton \$18.50 @20.50
Amer. floated.....	1 ton 19.00 @20.00
Off color.....	1 ton 13.00 @16.50
Chalk, in bulk.....	1 ton 3.00 @ 3.25
In bbls.....	100 lb. @ .35
China Clay, Imported.....	1 ton 11.00 @17.50
Cobalt, Oxide.....	100 lb. 2.50 @ 2.80
Whiting, Commercial.....	100 lb. .45 @ .52
Gilders.....	100 lb. .55 @ .65
Ex. Gilders.....	100 lb. .60 @ .65
Putty, Commercial—	100 lb.
In bladders.....	\$1.70 @1.85
In bbls, or tubs.....	1.30 @1.45
In 1 lb to 5 lb cans.....	2.65 @2.95
In 12½ to 50 lb cans.....	1.50 @1.90
Spirits Turpentine—	gal.
In Oil bbls.....	69½ @70
In machine bbls.....	70 @70½
Glue—	
Cabinet.....	12 @15
Common Bone.....	7½ @ 9
Extra White.....	18 @24
Foot Stock, White.....	12 @14
Foot Stock, Brown.....	9 @11
German Hide.....	12 @18
French.....	10 @10
Irish.....	13 @16
Low Grade.....	10 @12
Medium White.....	14 @17
Gum Shellac—	
Bleached, Commercial.....	46 @48
Bone, Dried.....	57 @
Button.....	40 @50
Diamond I.....	60 @61
Pine Orange.....	52 @57
A. C. Garnet.....	46 @47
Kala Button.....	35 @36
Octagon B.....	63 @64
T. N.....	48 @49
V. S. O.....	60 @61
Colors in Oil—	
Black, Lampblack.....	12 @14
Blue, Chinese.....	36 @46
Blue, Prussian.....	32 @36

Blue, Ultramarine.....	13 @16
Brown, Vandyke.....	11 @14
Green, Chrome.....	12 @16
Green, Paris.....	12 @15
Sienna, Raw.....	12 @15
Sienna, Burnt.....	12 @15
Umber, Raw.....	11 @14
Umber, Burnt.....	11 @14

### White Lead, Zinc, &c.—

Lead, English white, in Oil.....	9½ @10
Lead, American White:	
Lots of 500 lb or over, in Oil.....	@ 7½
Lots less than 500 lb, in Oil.....	@ 8
Lead, White, in oil, 25 lb tin pails, add to keg price.....	@ ½
Lead, White, in oil, 12½ lb tin pails, add to keg price.....	@ 1
Lead, White, in oil, 1 to 5 lb cans, add to keg price.....	@ 1½
Lead, American, Terms: For lots 12 tons and over ¼¢ rebate; and 2¢ for cash if paid in 15 days from date of invoice; for lots of 500 lbs. and over 2¢ for cash if paid in 15 days from date of invoice, for lots of less than 12 tons, net.	
Zinc, American, dry.....	5½ @ 5½
Zinc, French:	
Antwerp, Red Seal, dry.....	8½
Antwerp, Green Seal, dry.....	10½
Paris, Red Seal, dry.....	9½
Paris, Green Seal, dry.....	11
Zinc, V. M. French, in Poppy Oil:	
Green Seal:	
Lots of 1 ton and over.....	13½ @13½
Lots of less than 1 ton.....	13½ @13½
Zinc, V. M. French, in Poppy Oil:	
Red Seal:	
Lots of 1 ton and over.....	11½ @12½
Lots of less than 1 ton.....	12½ @12½
Discounts—French Zinc—Discounts to buyers of 10 bbl, lots of one or mixed grades. 1%: 25 bbls., 2%: 60 bbls., 4%.	
Dry Colors—	
Black, Carbon.....	6¼ @10
Black, Drop, American.....	3¼ @ 8
Black Drop, English.....	5 @13

Black, Ivory.....	16 @20
Lamp, Com.....	4 @ 6
Blue, Celestial.....	4 @ 6
Blue, Chinese.....	31 @33
Blue, Prussian.....	29 @32
Blue, Ultramarine.....	4½ @15
Brown, Spanish.....	¼ @ 1
Carmine, No. 40.....	\$3.10 @3.25
Green, Chrome, ordinary.....	3½ @ 7
Green, Chrome, pure.....	17 @25
Lead, Red, bbls, ½ bbls, kegs.....	@ 7½
Litharge, bbls, ½ bbls, kegs.....	@ 7½
Ocher, American.....	1 ton \$8.50 @16.00
American Golden.....	2½ @ 3½
French.....	1¼ @ 2
Foreign Golden.....	3 @ 4
Orange Mineral, English.....	10 @12
French.....	10½ @12
German.....	8½ @10
American.....	8½ @ 9
Red, Indian, English.....	4½ @ 6
American.....	3 @ 3½
Red, Turkey, English.....	4 @10
Red, Tuscan, English.....	7 @10
Red, Venetian, Amer.....	100 lb \$0.50 @1.25
English.....	100 @ \$1.15 @1.75
Sienna, Italian, Burnt and Powdered.....	3 @ 6
Italian, Raw, Powdered.....	3 @ 7
American, Raw.....	1½ @ 2
American Burnt and Powdered.....	1½ @ 2
Talc, French.....	1 ton \$18.00 @25.00
American.....	1 ton 15.00 @25.00
Terra Alba, French.....	100 lb. 90 @ 1.00
English.....	100 lb. 80 @ 1.00
American.....	100 lb. No. 1. 75 @ .80
American.....	100 lb. No. 2. 60 @ .65
Umber, Turkey, Burnt & Powdered.....	2 @ 3½
Burnt, American.....	14 @ 2
Raw, American.....	14 @ 2
Yellow Chrome.....	12 @14
Vermilion, American Lead.....	7 @25
Onicksilver, bulk.....	@
Onicksilver, bags.....	@
English, Imported.....	65 @70
Chinese.....	\$0.90 @1.00



# Current Hardware Prices.

**General Goods.**—In the following quotations General Goods—that is, those which are made by more than one manufacturer—are printed in *Italics*, and the prices named, unless otherwise stated, represent those current in the market as obtainable by the fair retail Hardware trade, whether from manufacturers or jobbers. Very small orders and broken packages often command higher prices, while lower prices are frequently given to larger buyers.

**Special Goods.**—Quotations printed in the ordinary type (Roman) relate to goods of particular manufacturers, who are responsible for their correctness. They usually represent the prices to the small trade, lower prices being obtainable by the fair retail trade, from manufacturers or jobbers.

**Range of Prices.**—A range of prices is indicated by means of the symbol @. Thus 33 1/3 @ 33 1/3 & 10% signifies

that the price of the goods in question ranges from 33 1/3 per cent. discount to 33 1/3 and 10 per cent. discount.

**Names of Manufacturers.**—For the names and addresses of manufacturers see the advertising columns and also THE IRON AGE DIRECTORY, issued May, 1906, which gives a classified list of the products of our advertisers and thus serves as a DIRECTORY of the Iron, Hardware and Machinery trades.

**Standard Lists.**—A new edition of "Standard Hardware Lists" has been issued and contains the list prices of many leading goods.

**Additions and Corrections.**—The trade are requested to suggest any improvements with a view to rendering these quotations as correct and as useful as possible to Retail Hardware Merchants.

## Adjusters, Blind—

Domestic,  $\frac{1}{2}$  doz. \$3.00.....33 1/3%  
North's.....10%  
Zimmerman's—See Fasteners, Blind.

### Window Stop—

Ives' Patent.....35%  
Taplin's Perfection.....35%

### Ammunition—See Caps, Cartridges, Shells, &c.

### Anti-Rattlers—

Fernald Mfg. Co. Burton Anti-Rattlers,  $\frac{1}{2}$  doz. pairs, Nos. 1, 50.75; 2, 50.60; 4, 51.00; 5, 50.50.  
Fernald Quick Shifter,  $\frac{1}{2}$  doz. pairs.....\$2.00@3.00

### Anvils—American—

Eagle Anvils..... $\frac{1}{2}$  lb. @ 8 1/2¢  
Hay-Budden, Wrought.....9 1/2¢@9 3/4¢  
Trenton..... $\frac{1}{2}$  lb. 9 1/2¢@9 3/4¢

### Imported—

Peter Wright & Sons,  $\frac{1}{2}$  lb. 84 to 340 lb. 11¢; 350 to 600 lb. 11 1/2¢.

### Anvil, Vise and Drill—

Millers Falls Co., \$18.00.....15-10%

### Apple Parers—See Parers, Apple, &c.

### Aprons, Blacksmiths'—

Livingston Nail Co.....33 1/3%

### Augers and Bits—

Com. Double Spur.....70¢@70¢10%  
Jennings' Patn., reg. finish.....60¢@60¢10%

Black Lip or Blued.....60¢@60¢5%  
Boring Mach. Augers.....70%  
Car Bits, 12-in. twist.....50¢10%  
Ford's Auger and Car Bits.....40¢5%  
Ft. Washington Auger Co., Concord's.....35%

Forster Pat. Auger Bits.....35%  
C. E. Jennings & Co.:  
No. 10 ext. lip R. Jennings' list.....25%  
No. 30, R. Jennings' list.....40¢7 1/2%

Russell Jennings.....25¢10¢2 1/2%  
L. Hommedieu Car Bits.....15%  
Mayhew's Countersink Bits.....45%  
Pugh's Black.....20%  
Pugh's Jennings' Pattern.....35%  
Snell's Auger Bits.....60%  
Snell's Hell Hangers Bits.....60%  
Snell's Car Bits, 12-in. twist.....60%  
Snell's King Auger Bits.....50%  
Wright's Jennings' Bits.....50%

### Bit Stock Drills—

See Drills, Twist.

### Expansive Bits—

Clark's small, \$18; large, \$28.....50¢10%  
Clark's Pattern, No. 1,  $\frac{1}{2}$  doz. \$38;  
No. 2, \$18.....60¢10¢10%  
Ford's, Clark's Pattern.....60%  
C. E. Jennings & Co., Steer's Pat. 25%  
Lavigne Pat., small size, \$18.80; large size, \$26.00.....60¢10¢10%  
Swan's.....60%

### Gimlet Bits—

Common Dble. Cut..... $\frac{1}{2}$  doz. \$3.00@3.25  
German Pattern, Nos. 1 to 10,  
\$4.75; 11 to 13, \$5.75

### Hollow Augers—

Bonney Pat., per doz. \$5.50@6.00  
Ames.....2-10%  
Universal.....20%  
Wood's Universal.....25%

### Ship Augers and Bits—

Ship Augers.....50¢10%  
Ford's.....33¢45%  
C. E. Jennings & Co.:  
Watrous'.....33¢45%  
Snell's.....40%

### Awl Hafts—See Handles, Mechanics' Tool.

### Awls—

Brad Awls:  
Handled.....gro. \$2.75@3.00  
Unhanded, Shlided.....gro. \$3.50@4.00  
Unhanded, Patent.....gro. \$6.00@7.00  
Peg Awls:  
Unhanded, Patent.....gro. \$1.50@2.00  
Unhanded, Shlided.....gro. \$1.50@2.00  
Scratch Awls:  
Handled, Com.....gro. \$2.50@3.00  
Handled, Socket.....gro. \$1.50@2.00

### Awl and Tool Sets—See Sets, Awl and Tool.

### Axes—

Single Bit, base weights: Per doz.  
First Quality.....\$1.75@5.00  
Second Quality.....\$1.25@1.50  
Double Bit, base weights:  
First Quality.....\$7.00@7.50  
Second Quality.....\$5.50@6.75

## Axle Grease—

See Grease, Axle

### Axles—Iron or Steel

Concord, Loose Collar.....45¢@50¢  
Concord, Solid Collar.....45¢@50¢  
No. 1 Common, Loose.....35¢@40¢  
No. 1 1/4 Com., New Styles.....45¢@50¢  
No. 2 Solid Collar.....35¢@40¢  
Half Patent:

Nos. 7, 8, 11 and 12.....70¢@75%  
Nos. 13 to 14.....70¢@75%  
Nos. 15 to 18.....75¢@75¢5%  
Nos. 19 to 22.....75¢@75¢5%

### Boxes, Axle—

Common and Concord, not turned lb., 45¢@50¢  
Common and Concord, turned lb., 51¢@60¢  
Half Patent.....lb., 91¢@1.00

### Bait—Fishing—

Hendryx:  
A Bait.....20%  
B Bait.....25%  
Competitor Bait.....20¢5%

### Balances—Sash—

Caldwell new list.....50%  
Pulman.....50¢10¢60%

### Spring—

Spring Balances.....50¢10¢60%  
Chatillon's:  
Light Spg. Balances.....50¢50¢10%  
Straight Balances.....10¢@40¢10%  
Circular Balances.....50¢10%  
Large Dial.....30%

### Barb Wire—See Wire, Barb.

### Bars—Crow—

Steel Crowbars, 10 to 40 lb. per lb., 2 1/4¢@3¢

### Towel

No. 10 Ideal, Nickel Plate,  $\frac{1}{2}$  gro. \$8.50

### Beams, Scale—

Scale Beams.....40%  
Chatillon's No. 1.....30%  
Chatillon's No. 2.....40%

### Beaters, Carpet—

Holt-Lyon Co.:  
No. 12 Wire Coppered  $\frac{1}{2}$  doz. \$8.80;  
Tinned.....\$9.85  
No. 11 Wire Coppered  $\frac{1}{2}$  doz. \$1.15;  
Tinned.....\$1.79  
No. 10 Wire Tinned..... $\frac{1}{2}$  doz. \$1.50  
Western W. G. Co.:  
No. 1 Electric..... $\frac{1}{2}$  gro. \$7.80  
No. 2 Buffalo..... $\frac{1}{2}$  gro. \$9.00  
No. 3 Perfection Dust..... $\frac{1}{2}$  gro. \$8.00

### Egg—

Holt-Lyon Co.:  
Holt, per doz. No. 5, Jap'd, \$8.80;  
No. A, Jap'd, \$1.15; No. B, Jap'd, \$1.85; No. 6, Jap'd, \$1.65;  
Lyon, Jap'd, per doz., No. 2, \$1.35.

### Taplin Mfg. Co.: Improved Dover, per gro., No. 60, \$6.00; No. 75, \$6.50; No. 100, \$7.00; No. 102, Tin'd, \$8.50; No. 150, Hotel, \$15.00; No. 152, Hotel Tin'd, \$17.00; No. 200, Tumbler, \$8.50; No. 202, Tumbler Tin'd, \$9.50; No. 203, Mammoth, per doz., \$25.00.

### Turner & Seymour Mfg. Co.: T. & S. Dover.....\$6.00

### Western W. G. Co.: No. 2, \$8.00; Perfection, No. 3, \$8.00.

### Wonder (R. M. Co.): $\frac{1}{2}$ gro. net, \$6.25

### Bellows—

Blacksmith, Standard List.....65%  
Split Leather.....65%  
Grain Leather.....60%

### Hand—

Inch.....6 7 8 9 10  
Doz.....\$5.50 6.15 6.60 7.15 7.70

### Molders—

Inch.....9 10 11 12 14  
Doz.....\$8.00 9.00 10.50 12.50 14.50

### Bells—Cow—

Ordinary Goods.....75¢@75¢10¢5%  
High grade.....70¢10¢75%  
Jersey.....75¢10%  
Texas Star.....50%

### Door—

Abbe's Gong.....40¢@40¢10%  
Barlow Gong.....50%  
Home R. & E. Mfg. Co.'s.....50¢10%  
Trip Gong.....50¢@50¢10%  
Yankee Gong.....10¢@10¢50%

### Polished, Brass.....50¢@50¢10%

### White Metal.....50¢@50¢5%

### Nickel Plated.....40¢10¢50%

## Miscellaneous—

Farm Bells.....lb., 2 1/4¢@2 1/2¢  
Church and School.....60%  
Fable Call Bells.....50¢@50¢10%

## Belting—Leather—

Extra Heavy, Short Lap.....60¢@5%  
Regular Short Lap.....60¢10¢5%  
Standard.....70%  
Light Standard.....70¢@5%  
Cut Leather Lacing.....45%  
Leather Lacing Sides, per sq. ft. 25¢

## Rubber—

Agricultural (Low Grade).....75¢@75¢8%  
Common Standard.....70¢@70¢10%  
Standard.....60¢@60¢10%  
Extra.....60¢@60¢5%  
High Grade.....50¢@50¢10%

## Bench Stops—

See Stops, Bench

## Benders and Upsetters, Tire—

Detroit Perfected Tire Bender.....40%  
Detroit Stoddard's Lightning Tire Upsetters, No. 1, \$4.25; No. 2, \$7.25; No. 3, \$10.50; No. 4, \$16.25; No. 5, \$20.50.  
Green River Tire Benders and Upsetters.....30%

## Bicycle Goods—

John S. Long's Son & Co.'s 1907 list:  
Chain, Parts, Spokes.....50%  
Tubes.....60%

## Bits—

Auger, Gimlet, Bit Stock Drills, &c.—See Augers and Bits.

## Blocks—Tackle—

Common Wooden.....75%  
Hartz St. Tackle Blocks.....50¢@50¢5%  
B. & L. B. Co.:  
Boston Wood Snatch, 50%; Ellipse Steel, 75%; Hollow Steel, 50¢10%; Star Wire Rope, 50%; Tarbox Metal Snatch, 50%; Tarbox New Style Steel, 50¢10%; Wire Rope Snatch, 50%.

Lane's Patent Automatic Lock and Junior.....30%  
Stowell's Novelty, Mal. Iron.....50%  
Stowell's Loading.....50¢10%  
See also Machines, Hoisting.

## Boards, Stove—

Paper and Wood Lined.....40%  
Embossed.....50%

## Boards, Wash—

See Washboards.

## Bobs, Plumb—

Keuffel & Esser Co.....83 1/3%

## Boils—

Carriage, Machine, &c.—  
Common Carriage (cut thread):  
% X 6 and smaller.....70¢12 1/2%  
Larger and Longer.....60¢12 1/2%  
Phila. Eagle \$3.00 list May 21, '99

## Boiled Ends.....65¢@65¢5%

## Machine, $\frac{3}{4}$ x 4 and smaller.....70¢12 1/2% Machine, larger and longer.....60¢12 1/2% Machine, larger and longer.....60¢12 1/2%

## Door and Shutter—

Cast Iron Barrel, Japanned, Round Brass Knob:  
Inch.....4 5 6 8  
Per doz.....\$1.30 35 45 60 80  
Cast Iron Spring Foot, Jap'd:  
Inch.....6 8 10  
Per doz.....\$1.20 1.50 2.25  
Cast Iron Chain, Flat, Japanned:  
Inch.....6 8 10  
Per doz.....\$1.00 1.40 1.65  
Cast Iron Flat Shutter, Jap'd, Brass Knobs:  
Inch.....6 8 10  
Per doz.....\$0.75 35 1.25  
Wrought Barrel Jap'd.....80¢@80¢10%  
Barrel Bronzed.....60¢10%  
Spring.....70¢10¢70¢10¢10%  
Shutter.....50¢@50¢10¢5%  
Square Neck.....75¢@75¢10%  
Square.....70¢10¢10%  
Ives' Patent Door.....50%

## Plow and Stove—

Plow.....65¢10¢—%  
Stove.....85¢@85¢5%

## Tire—

Common Iron.....80%  
Norway Iron.....80%  
American Screw Company:  
Norway Phila., list Oct. 16, '84.....80%  
Eagle Phila., list Oct. 16, '84.....82 1/2%  
Hay State, list Dec. 28, '99.....80%  
Franklin Moore Co.:  
Norway Phila., list Oct. 16, '84.....80%  
Eagle Phila., list Oct. 16, '84.....82 1/2%  
Eclipse, list Dec. 28, '99.....80%  
Mount Carmel Bolt Co.:  
Norway Phila., list Oct. 16, '84.....80%  
Eagle Phila., list Oct. 16, '84.....82 1/2%  
Mount Carmel, list Dec. 28, '99.....80%  
Russell, Burdall & Ward Bolt & Nut Co.:  
Empire, list Dec. 28, '99.....80%  
Norway Phila., list Oct. 16, '84.....80%  
Shelton Co.:  
Tiger Brand, list Dec. 28, '99.....80%  
Phila., Eagle, list Oct. 16, 1884.....82 1/2%  
Upson Nut Co.:  
Tire Bolts.....72 1/2%

## Borers, Tap—

Borers Tap, Ring, with Handle:  
Inch.....1 1/4 1 1/2 1 3/4 2  
Per doz.....\$1.80 5.60 6.40 8.00  
Inch.....2 1/4 2 1/2 2 3/4 3  
Per doz.....\$5.65 11.50  
Enterprise Mfg. Co., No. 1, \$1.25; No. 2, \$1.75; No. 3, \$2.50 each.....25%

## Boxes, Mitre—

C. E. Jennings & Co.....30%  
Langdon, New Langdon and Langdon Improved, 20¢10%;  
Acme.....15¢10%  
Perfection.....40%  
Seavey.....40%  
Stanley B. & L. Co., Nos. 240 to 460, 30%; Nos. 50 and 60.....35%

## Braces—

Common Ball, American, \$1.25@1.50  
Barber's.....50¢10¢10%  
Pray's Genuine Spofford's.....60%  
Pray's No. 70 to 120, 81 to 123, 207 to 411.....60%  
C. E. Jennings & Co.....50¢5%  
Jennings's Ratchet.....60%  
Mayhew's Quick Action Hay Pat. 50%  
Millers Falls Drill Braces.....25¢10%  
L. S. & W. Co., Peck's Pat. 60¢@60¢5%  
Stanley B. & L. Co.:  
Stanley, 35%; Victor.....45%

## Brackets—

Wrought Steel.....70¢10¢75¢10%  
Griffin's Pressed Steel.....75¢10¢75¢10%  
Griffin's Folding Brackets.....70¢10%  
Stowell's Cast Shelf, 75%; Sink, 50%  
Western W. G. Co. Wire.....60¢10%

## Bright Wire Goods—

See Wire and Wire Goods.

## Broilers—

Kilbourne Mfg. Co.....75¢20%  
Western W. G. Co.....80%  
Wire Goods Co.....75¢75¢10%

## Buckets, Galvanized—

Mfg's list, price per gross:  
Quart. 10 12 14  
Water, Reg.....25.35 28.00 32.00  
Water, Hrn.....45.35 48.00 52.00  
Fire, Rd. Btm.....32.00 34.65 38.65  
Well.....37.35 41.35 45.35

## Bucks, Saw—

Hoosier..... $\frac{1}{2}$  doz. \$36.00

## Bull Rings—See Rings, Bull

## Butts—Brass—

Wrought, High List, Oct. 26, '06.....45¢15¢10%  
Cast Brass, Tiebout's.....40%

## Cast Iron—

Fast Joint, Broad.....40¢10¢50%  
Fast Joint, Narrow.....40¢10¢50%  
Loose Joint.....70¢10¢75%  
Loose Pin.....70¢10¢75%  
Mauer's Hinges.....70¢10¢75%  
Parliament Butts.....70¢10¢75%

## Wrought Steel—

Reversible and Broad.....70¢5%  
Light Reversible, Light Nar. row.....70¢5%  
Loose Joint, Narrow, Light Inside Blind, etc.....70%  
Back Flaps, Table Chest.....65%

## Cages, Bird—

Hendryx, Brass: Series 5000 5000, 1100 10%; 1200 25%; 200 300, 600 900.....40%

Hendryx Bronze; Series 700, 500, 400.  
Hendryx Enamelled.....40%

**Calipers**—see *Compasses*.

**Chisels, Toot and Heel**—

Blunt, 1 prong, per lb., 4 1/4 @ 4 3/4¢  
Sharp, 1 prong, per lb., 4 1/4 @ 5 1/4¢  
Burras Blunt, 1/2 @ 4 1/4¢; 3/4 @ 5 1/4¢

Gautier, Blunt, 4 @ 4 1/4¢; Sharp, 4 @ 4 1/4¢  
Ferkins, Blunt, 1/2 lb., 3.65¢; Sharp, 4.15¢

**Can Openers**—

See *Openers, Can*.

**Cans, Milk**—

Illinois Pattern.....5 8 10 gal.  
New York Pattern.....1.50 2.20 2.45 each.  
Baltimore Pattern.....1.50 2.20 2.45 each.  
Dubuque.....1.35 1.60 1.75 each.

**Cans, Oil**—

Buffalo Family Oil Cans:  
5 10 gal. 50 60 90  
\$18.00 60.00 120.00 gro., net.

**Caps, Percussion**—

Eley's E. B.....50 @ 55¢  
G. D.....per M 34 @ 35¢  
F. L.....per M 40 @ 42¢  
G. E.....per M 40 @ 50¢  
Musket.....per M 62 @ 63¢

**Primers**—

Berdan Primers, \$2 per M.....20¢  
Primer Shells and Bullets.....15¢  
All other primers per M.....\$1.50 @ 1.60

**Cartridges**—

Blank Cartridges:  
32 C. F., \$5.50.....10¢  
32 C. F., \$7.00.....10¢  
22 cal. Rim, \$1.50.....10¢  
32 cal. Rim, \$2.75.....10¢  
B. B. Caps, Con. Ball, Supd.....\$1.40  
B. B. Caps, Round Ball.....\$1.40  
Central Fire.....25¢  
Target and Sporting Rifle.....15¢  
Primer Shells and Bullets.....15¢  
Rim Fire, Sporting.....50¢  
Rim Fire, Military.....15¢

**Casters**—

Red.....65¢  
Plate.....60¢  
Philadelphia.....70¢  
Acme, Ball Bearing.....35¢  
Boss Anti-Friction.....70¢  
Gem (Roller Bearing).....80¢  
Martin's Patent (Phoenix).....45¢  
Standard Ball Bearing.....45¢  
Tucker's Patent low list.....30¢  
Yale (Double Wheel) low list.....30¢

**Cattle Leaders**—

See *Leaders, Cattle*.

**Chain, Proof Coil**—

American Coil, Straight Link:  
5-16 1/4 5-16 3/4 7-16 1/2 9-16  
\$3.77 6.17 5.02 4.57 4.37 4.27 4.22  
1/2 3/4 1/2 to 1 1/2 to 1 1/2 in.  
\$4.77 4.07 4.02  
In case lots, deduct 25¢.

German Coil.....60¢ @ 60¢ @ 70%

**Halter**—

Halter Chains.....60¢ @ 60¢ @ 70%  
German Pattern Halter Chains,  
list July 24, '97.....60¢ @ 60¢ @ 70%  
Covert Mfg. Co.....35¢

**Cow Ties**—

See *Halters and Ties*.

**Trace, Wagon, &c.**—

Traces, Western Standard: 100 pr.  
6 1/2-6 3/4, Straight, with ring, \$28.00  
6 1/2-6 3/4, Straight, with ring, \$29.00  
6 1/2-8 1/2, Straight, with ring, \$32.00  
6 1/2-10 1/2, Straight, with ring, \$37.00

NOTE—Add 2¢ per pair for Hooks.  
Twist Traces: add per pair for Nos. 2  
and 3, 2¢; No. 1, 3¢; No. 4, 4¢ to price of  
Straight Link.

Eastern Standard Traces, Wag-  
on Chain, &c.....60%

**Miscellaneous**—

Jack Chain, list July 10, '93:  
Iron.....60¢ @ 10%  
Brass.....50¢ @ 10%  
Safety and Plumbers' Chain.....60¢ @ 10%  
Gal. Pump Chain.....1b. 4 @ 4 1/2¢  
Covert Mfg. Co.:  
Breast, Halter, Heel, Rein, Stal-  
lion.....40%  
Oneida Community:  
American Halter, Dog and Kennel  
Chains.....35¢ @ 50¢ @ 10%  
Niagara Dog Leads and Kennel  
Chains.....45¢ @ 50¢ @ 5%  
Wire Goods Co.:  
Dog Chain.....70¢ @ 10%  
Universal Dbl.-Jointed Chain.....50%

**Chain and Ribbon, Sash**—

Oneida Community:  
Steel Chain.....60%  
Pullman:  
Bronze Chain, 60%; Steel Chain  
Sash Chain Attachments, per set, 3¢  
Aluminum Sash Ribbon, per 100  
ft.....\$1.25 @ \$3.00  
Sash Ribbon Attachments, per set, 8¢

**Chalk**—(From Jobbers.)

Carpenters' Blue.....gro., 50¢ @ 55¢  
Carpenters' Red.....gro., 45¢ @ 50¢  
Carpenters' White.....gro., 40¢ @ 45¢

**Checks, Door**—

Bardsley's.....45%  
Pullman, per gro.....\$54.00  
Russwin.....33 1/2%

**Chests, Tool**—

American Tool Chest Co.:  
Boys' Chests, with Tools.....55%  
Youths' Chests, with Tools.....40%

Gentlemen's Chests, with Tools, 30%  
Farmers', Carpenters', etc., Chests,  
with Tools.....25%  
Machinists' and Pipe Fitters'  
Chests, Empty.....50%  
Tool Cabinets.....50%  
C. E. Jennings & Co.'s Machinists'  
Tool Chests.....35¢ @ 10%

**Chisels**—

Socket Framing and Firmer  
Standard List.....70¢ @ 10%  
Buck Bros.....30%  
Charles Buck Edge Tool Co.....30%  
C. E. Jennings & Co.:  
Socket Firmer No. 15.....60%  
Socket Framing No. 15.....60%  
Swan's.....66¢ @ 70%  
L. & I. J. White Co.....30¢ @ 30¢ @ 5%

**Tanged**—

Almond Drill Chucks.....30¢ @ 35%  
Buck Bros.....30%  
Charles Buck Edge Tool Co.....30%  
C. E. Jennings & Co. Nos. 191, 181, 25%  
L. & I. J. White Co.....25¢ @ 5%

**Cold**—

Cold Chisels, good quality, 13¢ @ 15¢  
Cold Chisels, fair quality, 11¢ @ 12¢  
Cold Chisels, ordinary.....9¢ @ 10¢

**Chucks**—

Almond Drill Chucks.....35%  
Almond Turret Six-Tool Chuck.....40%  
Beach Pat., each \$8.00.....35¢  
Empire.....25%  
Blacksmiths'.....25%  
Jacobs' Drill Chucks.....35%  
Pratt's Positive Drive.....25%  
Skinner Patent Chucks:  
Independent Lathe Chucks.....40%  
Universal, Reversible Jaws.....40%  
Combination, Reversible Jaws.....40%  
Drill Chucks, New Model, 25%:  
Standard, 40¢ @ 10%; Skinner Pat.  
25%; Positive Drive.....40%  
Planer Chucks.....30%  
Face Plate Jaws.....40%  
Standard Tool Co.....45%  
Improved Drill Chuck.....45%  
Union Mfg. Co.:  
Combination, Nos. 1, 2, 3, 4, 5, 6,  
7, 8 and 17, 40%; No. 21.....30%  
Scroll Combination, Nos. 82 and  
84.....30%  
Geared Scroll, Nos. 33, 34 and 35, 30%  
Independent Iron, Nos. 18 and 318, 35%  
Independent Steel, No. 64.....25%  
Union Drill Nos. 600, 100, 101,  
102, 103, 104.....25%  
Union Gear Drill.....25%  
Universal 11, 12, 16, 17, 13, 14, 15, 35%  
Universal, No. 42.....30%  
Iron Face Plate Jaws, Nos. 28, 30,  
48 and 50.....35%  
Steel Face Plate Jaws, Nos. 70 and  
72.....30%  
Westcott Patent Chucks:  
Lathe Chucks.....50%  
Little Giant Auxiliary Drill.....50%  
Little Giant Double Grip Drill.....50%  
Little Giant Drill, Improved.....50%  
Oneida Drill.....50%  
Scroll Combination Lathe.....50%

**Clamps**—

Adjustable Hammers.....20¢ @ 25%  
Carriage Makers', P., S. & W.  
Co., 40¢ @ 10¢ @ 50%  
Resly, Parallel.....33 1/2¢ @ 10%  
Lineman's, Utica Drop Forge & Tool  
Co.....40%  
Wood Workers, Hammers.....40¢ @ 10%  
Saw Clamps, see *Vices, Saw Filers*.

**Cleaners, Drain**—

Iwan's Champion, Adjustable.....55%  
Iwan's Champion, Stationary.....45%

**Sidewalk**—

Star Socket, All Steel.....\$4.05 net  
Star Shank, All Steel.....\$3.24 net  
W. & C. Shank, All Steel, 1/2 doz.,  
7 1/2 in., \$3.00; 1 in., \$3.25.

**Cleavers, Butchers'**—

Foster Bros.....30%  
Fayette R. Plumb.....30%  
L. & I. J. White Co.....30%

**Clippers, Horse and**

Chicago Flexible Shaft Company:  
1902 Century Horse, each.....\$10.75  
20th Century Horse, each.....\$5.00  
Lightning Belt Horse, each.....\$15.00  
Chicago Belt Horse, each.....\$20.00  
Stewart's Enclosed Gear  
Horse, each.....\$4.75  
Stewart's Patent Sheep Shear-  
ing Machine, each.....\$12.75  
Stewart's Enclosed Gear Shear-  
ing Machine, No. 8, each.....\$9.75

**Clips, Axle**—

Regular Styles, list July 1, '05, 80%  
Cloth and Netting, Wire  
—See *Wire, &c.*

**Cocks, Brass**—

Hardcare list:  
Plain Bibbs, Globe, Kerosene,  
Racking, Liquor, Bottling,  
&c.....60¢ @ 10¢ @ 65%  
Compression Bibbs.....55¢ @ 10¢ @ 60%

**Coffee Mills**—

See *Mills, Coffee*.

**Collars, Dog**—

Nickel Chain, Walter B. Stevens &  
Son's list.....40%  
Leather, Walter B. Stevens & Son's  
list.....40%

**Combs, Curry**—

Metal Stamping Co.....40%

**Compasses, Dividers, &c.**

Ordinary Goods.....70¢ @ 10¢ @ 75%  
Wm. Schollhorn Co.:  
Excelsior Dividers.....85%  
Lodi Dividers.....75%

**Conductor Pipe**—

L. C. T. to Dealers:  
Galvanized  
Steel.....Charcoal Copper.  
Iron, 1 1/2, 16¢ @ 10¢ @ 25%  
Eastern:  
70% 50¢ @ 17 1/2% 30%

**Central:**

65¢ @ 10% 55¢ @ 2 1/2% 20¢ @ 10%  
Western and Southern:  
65¢ @ 5% 50¢ @ 7 1/2% 20¢ @ 7 1/2%

**So. Western**

50¢ @ 2 1/2% 50% 20¢ @ 5%  
Terms, 60 days; 2% cash 10 days. Fac-  
tory shipments generally delivered.  
See also *Eave Troughs*.

**Coolers, Water**—

Gal. each.....2 3 4 6 8  
Labrador.....\$1.20 \$1.50 \$1.80 \$2.10 \$2.70  
Gal.....3 4 6 8  
Iceland, ea. \$1.80 \$2.10 \$2.40 \$3.00  
Gal.....2 3 4 6 8  
Galvanized, ea. \$1.85 \$2.00 \$2.25 \$2.50 \$3.00  
Galvanized, Lined, side handles,  
Gal.....3 5 8  
Each.....\$1.95 \$2.15 \$2.40 \$3.30 \$1.15  
White Enamelled, 25%; Agate Lined, 25%

**Coopers' Tools**—

See *Tools, Coopers'*.

**Coppers' Soldering**—

Soldering Coppers, 3 lbs. to pair  
and heavier, 32¢ @ 35¢; lighter  
than 3 lb. to pair.....34¢ @ 37¢

**Cord—Sash**—

Braided, Drab.....1b. 35¢  
Braided, White, Com., Nos. 8  
to 12, 26¢; No. 7, 26 1/2¢; No. 6,  
27 1/2¢.

Cable Laid Italian, lb., No. 18, 37¢  
Italian, lb., A, No. 18, 25¢; B, 22¢  
Common India.....lb., 11¢ @ 11 1/2¢  
Cotton Sash Cord, Twisted, 18¢ @ 20¢  
Patent Russia.....lb., 20¢

Cable Laid Russia.....lb., 21¢  
India Hemp, Br'd'd.....lb., 21¢  
India Hemp, Twisted.....lb., 19¢ @ 14¢  
Patent India, Twisted.....lb., 17¢

Amnison Cordage Co.: 1/2 lb. solid  
Braided, Nos. 8 to 12, \$3.24; No. 7,  
\$3.24; No. 6, \$3.25; 1/2 doz., 50 ft.,  
Oriole, \$2.00; 50 ft., Columbia, \$0.85;  
50 ft., Victors, \$1.00; 50 ft., 6-Thread,  
\$1.10; 60 ft., 3-Thread, \$0.95; 50 ft.,  
Manila, \$1.40; 60 ft., Jute, \$0.75.

Pearl Braided, cotton, No. 6, 40¢  
2 1/2¢; No. 7, 26 1/2¢; Nos. 8 to 12, 26¢  
Eddystone, Braided, Nos. 8 to 12, 26¢  
26¢; 7, 26 1/2¢; 6, 27 1/2¢.

Harmony Cable Laid Italian, Nos. 7  
to 10.....1/2 lb. 23¢

Wire Sash Cord.....15%  
Sash Cord Attachments, per doz. 10¢  
Samson, Nos. 8 to 12:

Braided, 1/2 lb., Drab Cotton,  
55¢; Italian Hemp, 40¢ @  
50¢; Lined, 65¢; White Cot-  
ton, 50¢; Spot, 60¢.....50¢

Massachusetts, White.....50¢  
Massachusetts, Drab.....45¢  
Phoenix, White, Nos. 8 to 12, 27¢;  
Silver Lake, per lb.:

A, Drab, 45¢; A, White, 40¢;  
B, Drab, 40¢; B, White, 35¢;  
Italian Hemp, 40¢; Lined, 57 1/2¢

See also *Chain and Ribbon*.

**Wire, Picture**—

list July 10, 1906.....85¢ @ 10¢ @ 10%  
Hendryx Standard Wire Picture  
old list, 85¢ @ 10%  
Turner & Stanton Co. Wire Picture  
Cord.....90%

**Cradles**—

Grain.....40¢ @ 12 1/2%

**Craysons**—

White Round Craysons, Cases, 100  
gro., \$6.50 @ \$7.50 at factory, but  
lower prices made by jobbers

Zelnicker's Lumber.....\$7 gro.  
White and Purple, Indelible.....\$7.50  
Blue, Green, Yellow and  
Terra Cotta, \$6.50; Black.....\$4.00

Giant Lumber, 5 1/4 in. x 15-16 in.  
round, all colors, \$16.25; Indeli-  
bles.....\$18.75

Genuine Soapstone, Metal Workers',  
5 in. x 1/4 in. Round, \$2.50; 5 in. x  
1/2 in. Square, \$1.75; 5 x 1/2 x 3-16,  
\$2.50; 5 x 1 1/4 x 3-16.....\$3.00

**Crooks, Shepherds'**—

Fort Madison, per doz., Heavy, \$7.00;  
Light.....\$6.50

**Crow Bars**—See *Bars, Crow*.

**Cultivators**—

Victor Garden.....50%

**Cutlery, Table**—

International Silver Company:  
No. 12 M'd'm Knives, 1817, 1/2 doz. \$3.50  
Star, Eagle, Rogers & Hamilton  
and Anchor.....1/2 doz. \$3.00  
Wm. Rogers & Son.....1/2 doz. \$2.50

**Cutters—Glass**—

H. H. Mayhew Co.....40%  
Red Devil.....50%  
Smith & Hemenway Co.....50%  
Woodward.....40%

**Meat and Food**—

American.....30%  
Nos. 401 402 403 404 405 406 407  
Each.....\$5 \$7 \$10 \$12 \$25 \$50 \$60

Enterprise:  
Nos. 5 10 12 22 32  
Each.....\$2 \$3 \$2.75 \$1.50 \$6 25¢ @ 25¢ @ 7 1/2¢  
No. 202, \$1.50, \$6.50, \$10.75, \$18.75  
Dixon's.....1/2 doz. 30¢ @ 30¢ @ 5%  
Nos. 1 2 3 4 5 6 7 8 9 10 11 12  
Ideal.....\$14.00 \$17.00 \$19.00 \$30.00  
Little Giant.....1/2 doz. 40¢ @ 40¢ @ 50%  
Nos. 305 310 312 320 322  
Each.....\$35.00 \$48.00 \$14.00 \$72.00 \$68.00

N. E. Food Choppers.....25%  
New Triumph No. 605, 1/2 doz. \$24.00

Russwin Food, No. 1, \$24.00; No. 2,  
\$27.00.....45¢ @ 10¢ @ 10%  
Woodruff's.....1/2 doz. 30¢ @ 30¢ @ 5%  
Nos. 100 150  
Each.....\$15.00 \$18.00

Enterprise Beef Shavers.....25¢ @ 30%

**Slaw and Kraut**—

Henry Diston & Sons:  
Slaw and Kraut Cutters.....35%  
Corn Graters.....30%

J. M. Mast Mfg. Co.:  
Slaw Cutters, 1 Knife.....1/2 doz. \$3.00  
Combined Slaw Cutter and Corn  
Grater.....1/2 doz. \$4.00

Tucker & Dorsey Mfg. Co.:  
Kraut Cutters.....40%  
Slaw Cutters, 1 Knife, 1/2 gr. \$18 @ \$20  
Slaw Cutters, 2 Knife, 1/2 gr. \$22 @ \$24

**Tobacco**—

All Iron, Cheap.....doz. \$4.25 @ \$4.50  
Enterprise.....25¢ @ 30%  
National, 1/2 doz., No. 1, \$21; No. 2,  
\$18.....40%

**Diggers, Post Hole, &c.**—

Diston's:  
Rapid, 1/2 doz., \$24.00.....25%  
Samson, 1/2 doz., \$34.00.....25%  
Iwan's Improved Post Hole Auger 10¢ @ 5¢  
Vaughan Pattern Post Hole Augers  
and 3, 24.00.....1/2 doz. \$6.25

Perfection Post Hole Diggers, 1/2  
doz.....\$8.75

Split Handle Post Hole Diggers,  
Kohler's, 1/2 doz., Universal, \$14.00;  
Little Giant, \$12.00; Hercules,  
\$10.00; Invincible, \$9.00; Rival,  
\$8.00; Pioneer.....\$7.00

Never-Break Post Hole Diggers, 1/2  
doz., \$24.00.....60%

**Drawers—See Compasses.**

**Drawers, Money**—

Tucker's Pat. Alarm Till No. 1, 1/2  
doz., \$18; No. 2, \$15; No. 3, \$12;  
No. 4, \$18.

**Drawing Knives**—

See *Knives, Drawing*.

**Dressers, Emery Wheel**—

Sterling Emery Wheel Dressers.....35%  
Sterling Wheel Dresser Cutters.....35%

**Drills and Drill Stocks**—

Blacksmith's Common Drilling  
Machines.....\$1.50 @ \$1.75

Breast, Millers Falls.....40¢ @ 10%  
Breast, P. S. & W.....40%  
Goodell Automatic Drills, 50¢ @ 60¢ @ 10%  
Johnson's Automatic Drills, Nos. 2,  
and 3.....16 1/2%

Johnson's Drill Points.....16 1/2%  
Millers Falls Automatic Drills, 35¢ @ 10%  
Ratchet, Curtis & Curtis.....25%  
Ratchet, Parker's.....40%  
Ratchet, Weston's.....40%

Ratchet, Weston's, Style H Im-  
proved.....40%  
Ratchet, No. 012.....40%  
Ratchet, Celebrated.....40%  
Ratchet, Whitney's, P. S. & W. 50%  
Whitney's Hand Drill No. 1, \$10.00,  
No. 2, \$12.00.....33 1/2%

Adjustable, No. 19, \$12.00.....33 1/2%

**Twist Drills**—

Bit Stock.....60¢ @ 10¢ @ 70%  
Taper and Straight Shank.....  
60¢ @ 10¢ @ 60¢ @ 10¢ @ 5%

**Drivers, Screw**—

Screw Driver Bits, per doz. 45¢ @ 50¢  
Balsey's Screw Holder and Driver, 1/2  
doz., 2 1/2-in



**Extractors, Lemon Juice**

—See Squeezers, Lemon.

**Fasteners, Blind**Zimmerman's ..... 50¢10%  
Waiting ..... 40¢10%**Cord and Weight**

Ives ..... 33%4

**Faucets**Cork Lined ..... 50¢50¢10%  
Metallic Key, Leather Lined..... 60¢10¢70%Red Cedar ..... 40¢10¢50%  
Petroleum ..... 70¢10¢75%B. & L. B. Co.:  
Metal Key ..... 60¢10%  
Star ..... 60%West Lock ..... 50¢10%  
John Sommer's Peerless Tip Key..... 40%John Sommer's Boss Tin Key..... 50%  
John Sommer's Victor Mtl. Key..... 50¢10%John Sommer's Duplex Metal Key..... 60%  
John Sommer's Diamond Lock..... 40%John Sommer's X L Cork Lined..... 50%  
John Sommer's Reliable Cork Lined..... 50¢10%John Sommer's Chicago Cork Lined..... 60%  
John Sommer's O. K. Cork Lined..... 50%John Sommer's No Brand, Cedar..... 40%  
John Sommer's Perfection, Cedar..... 40%McKenna, Brass:  
Burglar Proof, N. P. .... 25%  
Improved, ¾ and ½ inch..... 25%Self Measuring:  
Enterprise, ¾ doz. \$36.00..... 40¢10%  
Lane's, ¾ doz. \$36.00..... 40¢10%

National Measuring, ¾ doz. \$36.00..... 40¢10%

**Felloe Plates**

—See Plates, Felloe.

**Files—Domestic**List Nov. 1, 1899.  
Best Brands ..... 70¢10¢75¢10%  
Standard Brands ..... 75¢10¢75¢10¢10%  
Lower Grade ..... 75¢10¢10¢80¢10%**Imported**

Stubs' Tapers, Stubs' Ist, July 24, '97 ..... 33 1-3 @ 40%

**Fixtures, Fire Door**Richards Mfg. Co.:  
Universal, No. 103; Special, No. 104 ..... \$3.75  
Fusible Links, No. 96 ..... 50%  
Expansion Bolts, No. 107 ..... 60¢10%**Grindstone**Net Prices:  
Inch ..... 15 17 19 21  
Per doz. .... \$3.25 3.75 4.25 4.75  
P. S. & W. Co. .... 30¢10%  
Reading Hardware Co. .... 60%  
Stowell's Giant Grindstone Hanger..... ¾ doz. \$6.00

Stowell's Grindstone Fixtures, Extra Heavy, 40¢10%; Light ..... 50%

**Fodder Squeezers**

—See Compressors.

**Forks**

NOTE.—Manufacturers are selling from the list of September 1, 1904, but many jobbers are still using list of August 1, 1899, or selling at net prices.

Iowa Dig-Key Potato ..... 60¢10%  
Victor, Hay ..... 60¢15¢25%  
Victor, Manure ..... 60%  
Victor, Header ..... 60%  
Champion, Hay ..... 60%  
Champion, Header ..... 60%  
Champion, Manure ..... 60¢15¢25%  
Columbia, Hay ..... 60¢20%  
Columbia, Manure ..... 70%  
Hawkeye Wood Barley ..... 70¢12%  
W. & C. Potato Digger ..... 60¢10%  
Acme Hay ..... 60¢20%  
Acme Manure, 4 tine ..... 60¢10¢5%  
Dakota Header ..... 60¢20%  
Jackson Steel Barley ..... 60¢20%  
Kansas Header ..... 60%  
W. & C. Favorite Wood Barley ..... 40%  
Plated—See Spoons.**Frames—Saw**White, 8' 6" Bar, per doz. 75¢80¢  
Red, 8' 6" Bar, per doz. \$1.00¢1.25  
Red, Dbl. Brace, per doz. \$1.40¢1.50**Freezers, Ice Cream**Qt. .... 1 2 3 4 6  
Each ..... \$1.30 \$1.60 \$1.90 \$2.20 \$2.50**Fruit and Jelly Presses**

—See Presses, Fruit and Jelly.

**Fry Pans—See Pans, Fry****Fuse—Per 1000 Feet**Hemp ..... \$2.75  
Cotton ..... 3.20  
Waterproof Sgl. Taped. 3.65  
Waterproof Dbl. Taped. 4.40  
Waterproof Tpl. Taped. 5.15**Gates, Molasses and Oil**

Stebbins' Pattern ..... 80¢10%

**Gauges**Marking, Mortise, &c. 50¢50¢10%  
Chapin-Stephens Co.:  
Marking, Mortise, &c. .... 50¢50¢10%  
Diston's Marking, Mortise, &c. .... 67%  
Stanley R. & L. Co.'s Butt and Rabbet Gauge ..... 35%  
Marking and Mortise ..... 33%  
Wire, Brown & Sharpe's ..... 25%  
Wire, Morse's ..... 25%  
Wire, P. S. & W. Co. .... 30%**Gimlets—Single Cut**Numbered assortment, per gro.  
Nail, Metal, No. 1 ..... \$2.00; 2, \$2.50  
Spike, Metal, No. 1 ..... \$1.00; 2, \$1.50  
Nail, Wood Handled, No. 1 ..... \$2.50; 2, \$3.00  
Spike, Wood Handled, No. 1 ..... \$2.50; 2, \$3.00**Glass, American Window**

—See Trade Report.

**Glasses, Level**

Chapin-Stephens Co. .... 65¢65¢10%

**Glue, Liquid Fish**

Bottles or Cans, with Brush..... 25¢10¢50%

International Glue Co. (Martin's)..... 40%

**Grease, Axle**

Common Grade ..... gro. \$1.50¢16.00

Dixon's Everlasting, 10-lb pails, ea. 86¢; in boxes, ¾ doz., 1 lb. \$1.20;  
2 lb. .... \$2.00  
Helmert Hard Oil ..... 25%**Griddles, Soapstone**

Pike Mfg. Co. .... 33%¢33%¢10%

**Grindstones**Pike Mfg. Co.:  
Improved Family Grindstones, ¾ inch, ¾ doz., \$2.00 ..... 33%  
Royal Mfg. Co.:  
Alumund Grinding Machines, each, Nos. 01, \$1.75; 1A, \$2.50; 10, \$5.00 ..... 30%  
Alumund Sickle Grinders, each, Nos. 20A, \$6.00; 20A Combined, \$6.50 ..... 30%  
Alumund Disc Grinders, each, \$2.50 ..... 30%**Grips, Nipple**

Perfect Nipple Grips ..... 40¢10¢2%

**Halters and Ties**

Cone Ties ..... 60¢5¢60¢10%

Covert Mfg. Co.:  
Web ..... 30¢2%  
Jute Rope ..... 35%  
Sisal Rope ..... 45%  
Cotton Rope ..... 45%  
Hemp Rope ..... 45%  
Oneida Community:  
Am. Coil and Halters ..... 40¢40¢5%  
Am. Cow Ties ..... 45¢60%  
Niagara Coil and Halters ..... 45¢50%  
Niagara Cow Ties ..... 45¢50¢10%  
50¢50%**Hammers****Handled Hammers**Heller's Machinists' ..... 55¢10¢55¢10¢5%  
Heller's Farriers' ..... 40¢5¢40¢10%  
Magnetic Tack, Nos. 1, 2, 3, \$1.25, \$1.50, \$1.75 ..... 50%  
Peck, Stow & Wilcox, Steel ..... 50%  
Fayette R. Plumb:  
A. E. Nail ..... 40¢2%¢40¢12%  
Eggs and B. S. Hand ..... 50¢12%¢60%  
Machinists' Hammers ..... 50¢15¢60%  
Rivet and Tinner's ..... 40¢2%¢40¢12%  
Vaughan & Bushnell Mfg. Co.:  
A. E. Nail ..... 40¢2%¢40¢12%  
Machinists' ..... 50¢15¢60%  
50¢15¢60%  
50¢15¢60%  
50¢15¢60%**Heavy Hammers and Sledges**Under 3 lb., per lb., 50¢30¢5¢ ..... %  
3 to 5 lb., per lb., 40¢80¢5¢ ..... %  
Over 5 lb., per lb., 30¢ ..... %  
80¢10¢5¢ ..... %  
80¢10¢5¢ ..... %  
80¢10¢5¢ ..... %  
80¢10¢5¢ ..... %**Handles****Agricultural Tool Handles**A. C. Pick, &c. .... 60¢10¢10¢10%  
Hoe, Rake, &c. .... 40¢45¢5%  
Fork, Shovel, Spade, &c. .... 40¢45¢5%  
Long Handles ..... 40¢45¢5%  
D Handles ..... 40%**Cross-Cut Saw Handles**Atkins' ..... 40%  
Champion ..... 40%  
Diston's ..... 40%**Mechanics' Tool Handles**Ayer, assorted, gro. \$2.50¢3.00  
Brad Ayl. .... gro. \$1.65¢1.75  
Tanged Firmer, Apple, per gro. \$2.65; Hickory ..... \$2.50¢2.60  
Socket Firming, Apple, \$1.75¢1.95; Hickory ..... \$1.45¢1.60  
Socket Framing, Hickory ..... \$1.60¢1.75  
File, assorted, gro. \$1.50¢1.40  
Hammer, Hatchet, &c. .... 60¢10¢60¢10¢5%  
Hand Saw, Varished, doz. 80¢85¢; Not Varished ..... 65¢75%  
Plane Handles:  
Jack, doz. 30¢; Jack, Bolted, 75¢  
Fore, doz. 45¢; Fore, Bolted, 90¢  
Chapin-Stephens Co.:  
Carving Tool ..... 40¢40¢10%  
Chisel ..... 65¢65¢10%  
File and Awl ..... 65¢65¢10%  
Saw and Plane ..... 40¢40¢10%  
Screw Driver ..... 40¢40¢10%  
Millers Falls Adj. and Ratchet Auger Handles ..... 20¢10%  
Nicholson Simplicity File Handle ..... 40%  
W. A. Zelnicker Supply Co.:  
Hammer, per doz. 12 in., \$2.00; 14 in., \$2.00; 16 in., \$2.30; 18 in., \$2.50; 20 in., \$2.70; 22 in., \$3.00; 24 in., \$3.30; 26 in., \$3.50; 30 in., \$3.80.  
Sledge, per doz. oval 30 in., \$3.80; octagon, 30 in., \$3.80; oval, 36 in., \$4.00; octagon, 36 in., \$4.00.  
Axe, per doz., 28 to 34 in., \$5.60; 36 in., \$5.80.  
Adze, per doz., 36 in., \$5.80; 36 in., \$5.80.  
Pick per doz., R. R., 36 in., \$8.00; coal, 34 in., \$5.80.  
Hatchet, per doz., 12 to 14 in., \$2.00.**Hangers**

NOTE.—Barn Door Hangers are generally quoted per pair, without track, and Parlor Door Hangers per double set with track, &amp;c.

Allith Mfg. Co.:  
Reliable, No. 1; Allith, No. 3; Allith Adjustable, No. 6; Reliable Parlor Door ..... 50%**Chicago Spring Butt Co.**Friction ..... 25%  
Oscillating ..... 25%  
Big Twin ..... 25%  
Chisholm & Moore Mfg. Co.:  
Baggage Car Door ..... 50%  
Elevator ..... 30%  
Railroad ..... 30%  
Cronk & Carrier Mfg. Co.:  
Loose Axle ..... 60¢10%  
Roller Bearing ..... 70%  
Griffin Mfg. Co.:  
Solid Axle, No. 10, \$12.00 ..... 70%  
Roller Bearing, No. 11, \$15.00 ..... 70%  
Roller Bearing, Ex. Hy., No. 22, \$18.00 ..... 70%  
Hinged Hangers, \$16.00 ..... 60¢10%  
Lane Bros. Co.:  
Parlor, Ball Bearing, \$1.00; Standard, \$3.15; No. 105, \$2.85; New Model, \$2.80; New Champion ..... \$2.25  
Barn Door, Standard ..... 60¢5%  
Hinged ..... net \$6.08  
Covered ..... 60¢5%  
Special ..... 70¢5%  
Lawrence Bros.:  
Advance and Sterling ..... 60¢2%  
Cleveland and Peerless ..... 70¢7%  
Clipper, No. 75 ..... 60¢5%  
Crown ..... 60¢5%  
Cyclone-Tandem, net \$7.50  
Easy Parlor Door, Dbl. Sets, \$2.50; Single Sets, \$1.25 ..... 60%  
Giant ..... 60%  
Hummer ..... 70%  
New Cyclone, Flexible, \$16.00  
New York ..... 60¢2%  
McKinney Mfg. Co.:  
No. 1, Special, \$15 ..... 60¢10%  
No. 2, Standard, \$18 ..... 60¢10%  
Hinged Hangers, \$16 ..... 50%  
Meyers' Station Hangers ..... 60¢5%  
Richards Mfg. Co.:  
Hangers, Nos. 47, 48, 147, 247, 60¢5%  
Pioneer Wood Track, No. 3, \$2.25  
Roller B'y's St'l Track No. 12, \$2.50  
Roller B'y's St'l Track No. 13, \$2.50  
Roller B'y's, Nos. 39, 41, 43, 70¢7%  
Hero, Adj. Track No. 19, \$5.10  
Adjustable Track Tandem Trolley Track No. 16 ..... 50¢10%  
Seal, Steel Track No. 8 ..... 30%  
Auto Adj. Track No. 22 ..... 50¢5%  
Trolley B. D. No. 17, \$1.25; F. D. No. 120, \$2.25; No. 121, \$2.45; No. 150 ..... \$2.50  
Safety Underwriters F. D. No. 101 ..... 50%  
Tandem No. 41, 2½ and 3 60¢10%  
P. S. E. Adjustable Track No. 132 ..... 50¢5%  
Royal, Adjustable Track No. 122 ..... 50¢10%  
Ives' Wood Track No. 1 ..... \$2.25  
Trolley B. D. No. 20 ..... 50¢10%  
Trolley B. D. No. 24, \$1.30; No. 27, \$1.40; No. 28 ..... \$1.60  
Roller Bearings, Nos. 37, 38, 39, 41, 43, 44, Sizes 1 and 2, 70¢7%  
Anti-friction, No. 42; No. 44, sizes 2½ and 3 ..... 60%  
Hinged Tandem No. 48 ..... 60¢5%  
Folding Door B. B. Swivel No. 135 ..... 40%  
Stowell Mfg. & Foundry Co.:  
Acme Parlor Ball Bearing ..... 30%  
Ajax Hinge Door ..... 60%  
Apex Parlor Door ..... 50¢10¢5%  
Atlas ..... 60%  
Climax Anti-Friction ..... 50%  
Elevator ..... 40%  
Express ..... 50%  
Lundy Parlor Door ..... 50%  
Matchless ..... 60%  
Nansen ..... 70%  
Parlor Door, 50¢10%; Railroad ..... 50¢10%  
Steel, Nos. 300, 404, 500 ..... 50%  
Underwriters' Fire Door ..... 40%  
Wild West Warehouse Door ..... 50%  
Wilburn, No. 0, net, ¾ doz. \$9.00  
Zenith for Wood Track ..... 50%  
A. L. Sweet Iron Works:  
Check Back, 70%; Easy ..... 70%  
Climax Anti-Friction ..... 50¢10%  
Hylo Hinge, New Perfection ..... 60%  
Pilot, Pilot Hinge ..... 60%  
Rider Woooster ..... 65%  
Western Pattern ..... 70%  
Taylor & Boggs Fy Co.'s Kidder's Roller Bearing, 50¢15¢10%  
50¢15¢10%  
50¢15¢10%  
50¢15¢10%**Hangers—Garment**Pullman Trouser, ¾ gro. 1 pair Flat Aluminum, \$9.00; 1 pair Round Nickle, \$9.00; 1 pair Round Nickle, \$9.00; 1 pair Flat Gun Metal, \$12.00; 1 pair Flat Black Enameled, \$7.50; 1 pair Wood Clamp, \$13.50; Skirt Hangers, Folding, per gro. \$21.00; Coat Hangers, Folding, per gro. \$2.00; Garment Hanger Rods, Round Hanger, per gro. \$10.50; Garment Hanger Loop, Round Nickle, per gro. \$10.50  
Victor Folding ..... ¾ gro. \$9.60  
Western, W. G. Co. .... 75¢10%**Gate**

Myers' Patent Gate Hangers, ¾ doz. net ..... \$4.50

**Joist and Timber**

Lane Bros. Co. .... 30%

**Hasps**Griffin's Security Hasp ..... 50¢10%  
McKinney's Perfect Hasp, ¾ doz. 50%**Hatchets**Regular list, first qual. 40¢7%  
Second quality ..... 50¢10%**Heaters, Carriage**Clark, No. 5 \$1.75; No. 5R, \$2.00; No. 3, \$2.25; No. 3D, \$2.75; No. 7D, \$3.00; No. 3E, \$3.25; No. 1, \$3.50 ..... 25%  
Clark Coal, ¾ doz., \$0.75 ..... 20%**Hinges**

Blind and Shutter Hinges—Surface Gravity Locking Blind:

(Victor; National; 1868 O. P.; Niagara; Clark's O. P.; Clark's Tip; Buffalo.)

No. .... 1 1½ 2 5

Dox, pair ..... \$0.75 1.35 2.70

Mortise Shutter:  
(L. & P. O. S., Dixie, &c.)  
No. .... 1 1½ 2 5

Dox, pair ..... \$0.70 .65 .60 .55

Mortise Reversible Shutter (Buffalo, &c.):  
No. .... 1 1½ 2

Dox, pair ..... \$0.70 .65 .60 .55

North's Automatic Blind Fixtures, No. 2, for Wood, \$9.00; No. 3, for Brick, \$11.50 ..... 70%  
Charles Parker Co. .... 70¢75%  
Parker Wire Goods Co.:  
Hale & Benjamin Automatic Blind Hinges ..... 20%  
Hale's Blind Awning Hinges, No. 110, for wood, \$9.00; No. 111, for brick, \$9.00 ..... 20%  
Reading's Gravity ..... 60%  
Stanley's Steel Gravity Blind Hinges, No. 1647, ¾ doz. sets, without screws, \$0.95; with screws, \$1.25, Wrightsville Hardware Co.:  
O. S. Lull & Porter ..... 70¢10¢2%  
Acme, Lull & Porter ..... 70¢10¢2%  
Queen City Reversible ..... 70¢10¢2%  
Shepard's Noiseless, Nos. 60, 65, 55 ..... 70¢10¢2%  
Niagara, Gravity Locking, Nos. 1, 3 & 5 ..... 10¢10¢2%  
1868, Old Pat'n, No. 1 ..... 70%  
Nos. 3 & 5 ..... 70¢10¢2%  
Tip Pat'n, No. 1 ..... 75%  
No. 3 ..... 70¢10¢2%  
Buffalo Gravity Locking, Nos. 1, 3 & 5 ..... 70%  
Shepard's Double Locking, 70¢10¢2%  
Champion Gravity Locking ..... 70¢10¢2%  
Pioneer ..... 75%  
Empire ..... 60%  
W. H. Co.'s Mortise Gravity Locking, No. 2 ..... 60%**Gate Hinges**Clark's or Shepard's—Dox. sets:  
No. .... 1 3  
Hinges with L'chs. \$2.00 2.70 5.00  
Hinges only ..... 1.40 2.05 3.80  
Latches only ..... 70 70 35New England:  
With Latch ..... doz. \$12.00  
Without Latch ..... doz. \$11.60  
Reversible Self-Closing:  
With Latch ..... doz. \$11.75  
Without Latch ..... doz. \$11.35Western:  
With Latch ..... doz. \$11.75  
Without Latch ..... doz. \$11.15Wrightsville Hardware Co.:  
Shepard's or Clark's Hinges and Latches, Hinges only or Latches only, Nos. 1, 2 or 3 ..... 65¢5%**Pivot Hinges**Bommer Bros. Pivot ..... 40%  
Lawson Mfg. Co. Matchless ..... 50%**Spring Hinges**Holdback, Cast Iron, .46 \$50¢7.00  
Non-Holdback, Cast Iron, .46 \$50¢7.00  
J. Bardley:  
Bardley's Non-Checking Mortise Floor Hinges ..... 40%  
Bardley's Patent Checking ..... 33%  
Bommer Bros.:  
Bommer Ball Bearing Floor, 40%  
Bommer Spring Hinges ..... 40%  
No. 999 Wrot, Steel Hold Back, ¾ gr. \$9.00Chicago Spring Butt Co.:  
Chicago Spring Hinges ..... 25%  
Triple End Spring Hinges ..... 50%  
Chicago (Ball Bearing) Floor ..... 50%  
Garden City Engine House ..... 25%  
Keene's Saloon Door ..... 25%  
Columbian Hardware Co.:  
Acme, Wrought Steel ..... 30%  
Acme, Brass ..... 25%  
American ..... 30%  
Columbia, ¾ gr., No. 14, \$9.00; No. 18, \$23.00  
Columbia, Adj., No. 7, ¾ gr. \$12.00  
Columbian Hinges ..... 60¢10%  
Gem, new list ..... 30%  
Clover Leaf ..... 30%  
Oxford, new list ..... 30%  
Floor Spring Hinges ..... 65¢10%  
Lawson Mfg. Co. Matchless ..... 30%  
Richards Mfg. Co.:  
Superior Double Acting Floor Hinges ..... 40%  
Shelby Spring Hinge Co.:  
Buckeye All Steel Holdback Screen Door ..... ¾ gr. \$9.00  
Chief Ball Bearing Floor Hinge ..... 50%  
Ball Bearing Door ..... 25%  
No. 777, Sheet Steel Holdb'k, ¾ gr. pr. ..... \$9.00  
Superior Spring Hinge Co.:  
Superior Floor Hinges ..... 33%  
The Stover Mfg. Co.:  
Ideal, No. 16, Detachable, ¾ gr. \$12.50  
Ideal, No. 4 ..... ¾ gr. \$9.00  
New Idea No. 1 ..... ¾ gr. \$9.00  
New Idea, Double Acting ..... 50%  
New Idea Floor ..... 50%**Wrought Iron Hinges**

Strap and T Hinges, &amp;c., list December 20, 1904:

Light Strap Hinges ..... 60%  
Heavy Strap Hinges ..... 65%  
Light T Hinges ..... 55%  
Heavy T Hinges ..... 45%  
Extra Heavy T Hinges ..... 60%  
Hinge Hasps ..... 40%  
Cor. Heavy Strap ..... 65%  
Cor. Ex. Heavy T ..... 60%  
Screw Hook { 6 to 12 in., 1b. 3¢4¢  
and Strap { 15 to 20 in., 1b. 3¢4¢  
{ 25 to 36 in., 1b. 3¢4¢Screw Hook and Eye:  
¾ to 1 inch ..... 1b. 3¢4¢  
¾-inch ..... 1b. 7¢4¢  
½-inch ..... 1b. 8¢4¢

Extra 10% often given on most of these Hinges.

**Hitchers, Stall—**

Covert Mfg. Co., Stall Hitchers. 30&amp;2%

**Hods—Coal—**

Mfg's list, price per gross.

Inch	15	16	17	18
Gale, Open	\$35	\$39	\$42	\$46
Jap. Open	28	32	35	38
Gale, Funnell	43	48	52	56
Jap. Funnell	33	36	39	43

**Masons' Etc.—**

Cleveland Vine Spring Co.:

Steel Brick, No. 102, each \$1.05

Steel Mortar, No. 158, each \$1.35

**Hoes—Eye—**

Scovill and Oval Pattern.....

60&amp;100@60&amp;10&amp;10%

Grub, list Feb. 23, 1899.....

70&amp;100@75&amp;10%

D. &amp; H. Scovill.....30%

**Handled—**

NOTE.—Manufacturers are selling

from the list of September 1, 1904, but

many factors are still using list of August

1, 1899, or selling at net prices.

Cronk's Weeding, No. 1, \$2.75; No. 2, \$2.50

Star Double "Bit".....\$3.20

Ft. Madison Cotton Hoe.....70&amp;10&amp;10%

Ft. Madison Crescent Cultivator Hoe.....

70&amp;100@75&amp;10%

Ft. Madison Mattock Hoe.....

70&amp;100@75&amp;10%

Regular Weight.....70&amp;100@75&amp;10%

Junior Size.....70&amp;100@75&amp;10%

Ft. Madison Sprouting Hoe.....70&amp;100@75&amp;10%

Ft. Madison Dixie Tobacco Hoe.....

75&amp;100@75&amp;10%

Kretzinger's Cut Easy.....70&amp;100@75&amp;10%

Warren Hoe.....45&amp;100@75&amp;10%

W. &amp; C. Ivanhoe.....75&amp;100@75&amp;10%

B. H. B. in. Cultivator Hoe.....\$3.15

Acme Weeding.....70&amp;100@75&amp;10%

W. &amp; C. L'ning Shuffie Hoe.....70&amp;100@75&amp;10%

Hoisting Apparatus—

See Machines, Hoisting.

**Holders—Bit—**

Angular, 70 doz.....45&amp;10%

**Door—**

Bardsley's, Iron, 40%; Brass and

Bronze.....33&amp;10%

Empire.....50%

Pullman.....35%

Superior.....33&amp;10%

**File and Tool—**

Nicholson File Holders and File

Handles.....33&amp;10%

**Fruit Jar—**

Triumph Fruit Jar Holder, 70 gross,

\$10.80; 70 doz.....\$1.25

**Trace and Rein—**

Fernald Double Trace Holder, 70 doz,

pairs.....\$1.25

Dash Rein Holder, 70 doz. pairs.....\$1.25

**Hones—Razor—**

Pike Mfg. Co., Belgian, German and

Swiss.....50%

**Hooks—Cast Iron—**

Bird Cage, Reading.....40%

Clothes Line, Reading List.....40%

Clothes Line, Stowell's.....70%

Coat and Hat, Reading.....45&amp;20%

Coat and Hat, Stowell's.....70%

Coat and Hat, Wrightsville.....65%

Harness, Reading List.....60%

Harness, Stowell's.....60%

School House, Stowell's.....70%

**Wire—**

Belt.....80%

Wire C. &amp; H. Hooks.....75&amp;100@75&amp;10%

Columbian Hdw. Co., Gem.....70&amp;5%

Parker Wire Goods Co., King.....70&amp;10%

Western W. G. Co. Molding.....75%

Wire Goods Co.:

Acme, 60&amp;10%; Chief, 70%; Crown,

75%; Car, 60%; V. Grace, 75%;

Car Harness, 50&amp;10%.

**Wrought Iron—**

Box, 6 in., per doz., \$1.00; 8 in.,

\$1.25; 10 in., \$2.50.

Cotton.....doz. \$1.05@1.25

Wrought Staples, Hooks, &amp;c.—

See Wrought Goods

**Miscellaneous—**

Hooks, Bench, see Stops, Bench.

Bush, Light, doz. \$1.75; Medium,

\$5.35; Heavy, \$6.25

Grass, best, all sizes, per doz. \$1.60

Grass, common grades, all sizes,

per doz.....\$1.39

Whiffletree.....lb. 5¢@1¢

**Hooks and Eyes—**

Brass.....60&amp;50@60&amp;10&amp;5%

Malleable Iron.....70&amp;100@75&amp;10%

Covert Mfg. Co. Gate and Scuttle

Hooks.....40%

Ft. Madison Cut-Easy Corn Hooks,

70 doz. \$3.25 net

Turner &amp; Stanton Co. Cup and

Shoulder.....80&amp;10&amp;10%

Bench L. Jks—See Bench Stops.

Corn Hooks—See Knives, Corn.

**Horse Nails—**

See Nails, Horse.

**Horseshoes—**

See Shoes, Horses.

**Hose, Rubber—**

Garden Hose, 1/2-inch:

Competition.....ft. 5 @ 6¢

3-ply Guaranteed.....ft. 8 @ 9¢

4-ply Guaranteed.....ft. 10 @ 11¢

Cotton Garden, 1/2-in., coupled:

Low Grade.....ft. 8 @ 9¢

Fair Quality.....ft. 10 @ 11¢

**Irons—Sad—**

From 1 to 10.....lb. 3 @ 3 1/2¢

R. B. Sad Irons.....lb. 3 1/2 @ 5 1/2¢

Mrs. Potts', cents per set:

Nos. 10 55 60 65

Jon'd Tops.....80 77 90 88

Tin'd Tops.....85 88 93 92

New England Pressing, lb. 3¢@1¢

**Pinking—**

Pinking Irons.....doz. 60¢

**Irons, Soldering**

See Copiers.

**Jacks, Wagon—**

Covert Mfg. Co.:

Auto Screw.....30&amp;2%; Steel, 45%

Lockport.....50%

Lane's Steel.....30&amp;10&amp;2%

Richards' Tiger Steel, No. 130.....50&amp;10%

Smith &amp; Hemenway Co.'s.....25%

**Kettles—**

Brass, Spun, Plain.....20&amp;25%

Enamelled and Cast Iron—See Ware,

Hollow.

**Knives—**

Butcher, Kitchen, &amp;c.—

Foster Bros. Butcher, &amp;c.....30%

Wilkinson Shear &amp; Cutlery Co.....60%

**Corn—**

Wilkinson Shear &amp; Cutlery Co.:

Wilcut Brand Knives and Hooks.....60%

Wilmington Acme, 70 doz., \$2.65;

Dent, \$2.75; Adj. Serrated, \$2.20;

Serrated, \$2.10; Yankee No. 1, \$1.50;

Yankee No. 2, \$1.15.

**Drawing—**

Standard List.....75&amp;50@75&amp;10%

Jennings &amp; Griffin, Nos. 41, 42, 75;

Swan's.....65&amp;70%

Watrous.....16&amp;5%

L. &amp; I. J. White.....20&amp;50@25%

**Hay and Straw—**

Serrated Edge, per doz. \$5.50@5.75

Iwan's Sickle Edge.....70 doz. \$9.50

Iwan's Serrated.....70 doz. \$10.00

**Mincing—**

Buffalo.....70 gro. \$13.00

**Miscellaneous—**

Farriers'.....doz. \$3.00@3.25

Wostenholm's.....70 doz. \$3.00@3.25

**Knobs—**

Base, 2 1/2-inch, Birch, or Maple,

Rubber Tip.....gro. \$1.25@1.40

Carriage, Jap., all sizes.....

gro. 40¢@45¢

Door, Mineral.....doz. 65¢@70¢

Door, Por. Jap'd.....doz. 70¢@75¢

Door, Por. Nickel.....doz. \$2.05@2.15

Bardsley's Wood Door, Shutters, &amp;c. 15%

**Lacing, Leather—**

See Belting, Leather—

**Ladders, Store, &c.—**

Allith Mfg. Co., Reliable.....50%

Lane's Store.....25%

Myers' Noiseless Store Ladders.....50%

Richards Mfg. Co.:

Improved Noiseless, No. 112.....50%

Climax Shelf, No. 113.....50%

Trolley, No. 109.....50%

**Ladles, Melting—**

L. &amp; G. Mfg. Co. (low list).....25%

P. S. &amp; W.....40&amp;10%

Reading.....60%

**Lanterns—Tubular—**

Regular Tubular, No. 0.....

doz. \$4.25@4.50

Lift Tubular, No. 0.....

doz. \$4.75@5.00

Hinge Tubular, No. 0.....

doz. \$4.75@5.00

Other Styles.....40¢@45¢

**Bull's Eye Police—**

No. 1, 2 1/2-inch.....\$2.75@3.00

No. 2, 3-inch.....\$3.00@3.25

**Lasts and Stands, Shoe—**

Stowell's Atlas Malleable Iron.....50%

Stowell's Badger, Cast Iron.....50%

**Latches—Thumb—**

Roggin's Latches, with screw.....

doz. 35¢@40¢

**Door—**

Allith Mfg. Co., Automatic, No.

400, 70 doz.....\$1.00

Cronk &amp; Carrier Mfg. Co.:

70 doz. \$2.30

Cronk &amp; Carrier Mfg. Co., Latch,

Haap and Staples.....50%

Richards' Bull Dog, Heavy, No.

125.....50&amp;5%

Richards' Trump, No. 127.....\$1.50

Stowell's Steel.....50%

**Leaders, Cattle—**

Small.....doz. 50¢; large, 60¢

Covert Mfg. Co.:

Cotton, 45; Hemp, 45%; Jute, 35%;

Sisal.....20%

**Lifters, Transom—**

R. &amp; E.....10%

**Lines—**

Wire Clothes, Nos. 18 19 20

100 feet.....\$2.25 2.00 1.75

75 feet.....\$1.75 1.55 1.10

Annisson Waterproof Clothes, 50 ft.,

70 ft., \$2.50; Gilt Edge, \$3.00; Air

Line, \$2.00; Acme, \$1.00; Alabama,

\$1.00; Empire, \$1.00; Advance,

\$1.00; Eclipse, \$1.50; Chicago,

\$1.50; Standard, \$1.50; Columbia,

\$1.50; Allston, \$1.50; Calhoun, \$1.00.

Samson Cordage Works:

Solid Braided Chalk, Nos. 0 to 3, 40%

Solid Braided Mason's.....30%

Silver Lake Braided Chalk, No. 0,

\$6.00; No. 1, \$6.50; No. 2, \$7.00; No.

3, \$7.50.

Masons' Lines, Shade Cord, &amp;c.:

White Cotton, No. 3 1/2, \$1.50; No. 4,

\$2.00; No. 4 1/2, \$2.50; Colors, No. 3 1/2,

\$1.75; No. 4, \$2.25; No. 4 1/2, \$2.75;

Linen, No. 3 1/2, \$2.50; No. 4, \$3.50;

No. 4 1/2, \$4.50.

Tent and Awning Lines: No. 5,

White Cotton, \$7.50; Drab Cotton,

\$8.50

Clothes Lines, White Cotton: 50 ft.,

\$2.75; 75 ft., \$3.25; 100 ft., \$3.75; 150

ft., \$4.00; 200 ft., \$4.25; 300 ft., \$4.75;

150 ft., \$5.25.

Turner &amp; Stanton Co.:

Solid Braided Chalk, Mason's and

Awning Lines.....40%

Clothes Lines, White Cotton.....30%

Shade Cord, Cotton or Linen.....20%

**Locks—Cabinet—**

Cabinet Locks.....\$14%

**Door Locks, Latches, &c—**

NOTE.—Net Prices are very often made

on these goods.

Reading Hardware Co.....40%

R. &amp; E. Mfg. Co.....19%

**Elevator—**

Stowell's.....50%

**Padlocks—**

R. &amp; E. Mfg. Co. Wrought Steel and

Brass.....75&amp;10%

**Sash, &c.—**

Ives' Patent:

Bronze and Brass, 60%; Crescent,

40&amp;20%; Iron, 80%; Window Ven-

tilating, 55%; Robinson Pat. Ven-

tilating Sash Lock, 33 1/2%; Wrought

Bronze and Brass, 55%; Wrought

Steel, 55%.

Pullman Patent Ventilating Lock.....35%

Reading.....40%

**Machines—Boring—**

Com. Up'r, without Augers.....



**Picks and Mattocks—**

List, Feb. 23, 1899... 70¢ @ 70¢ & 10¢  
 Cronk's Handled Garden Mattock,  
 per doz., No. 2, \$2.00; No. 3, \$6.00.

**Pinking Irons—**

See Irons, Pinking.

**Pincers—**

Vaughan & Bushnell Mfg. Co.:  
 Blacksmiths, per doz., 10 in.,  
 \$5.00; 12 in., \$5.50; 14 in., \$6.00.  
 Carpenters' Claw, per doz., 6 in.,  
 \$2.00; 8 in., \$2.75; 10 in., \$3.50.

**Pins, Escutcheon—**

Brass... 50¢ @ 10¢ @ 60¢  
 Iron, list Nov. 11, '85... 60¢ @ 60¢ @ 10¢

**Pipe, Cast Iron Soil—**

Carload lots.  
 Standard, 2 1/2 in. 50¢ @ 10¢ @ 50¢ @ 10¢  
 Extra Heavy, 2 1/2 in. 65¢ @ 10¢  
 Fittings... 70¢ @ 10¢ @ 70¢ @ 10¢

**Pipe, Merchant—**

Consumers, Carloads.  
 Steel. Iron.

Bk. Galv. Bk. Galv.

1/2 in. 60¢ 50¢ 50¢ 50¢  
 3/4 in. 68 58 61 65 58 65  
 1 in. 70 58 63 65 51 65  
 1 1/4 in. 74 64 68 65 58 65  
 2 in. 69 54 63 65 48 65

**Pipe, Vitrified Sewer—**

Carload lots.  
 Standard Pipe and Fittings, 3  
 to 24 in., f.o.b. factory: 84¢  
 Second-class... 87¢

**Pipe, Stove—**

Per 100 joints.  
 Edwards' Nested: C. L. L. C. L.  
 5 in., Standard Blue... 7.25  
 6 in., Standard Blue... 7.75  
 7 in., Standard Blue... 8.75  
 8 in., Standard Blue... 9.00  
 9 in., Standard Blue... 9.50  
 10 in., Standard Blue... 10.00  
 11 in., Standard Blue... 10.50  
 12 in., Standard Blue... 11.00  
 13 in., Standard Blue... 11.50  
 14 in., Standard Blue... 12.00  
 15 in., Standard Blue... 12.50  
 16 in., Standard Blue... 13.00  
 17 in., Standard Blue... 13.50  
 18 in., Standard Blue... 14.00  
 19 in., Standard Blue... 14.50  
 20 in., Standard Blue... 15.00  
 21 in., Standard Blue... 15.50  
 22 in., Standard Blue... 16.00  
 23 in., Standard Blue... 16.50  
 24 in., Standard Blue... 17.00  
 25 in., Standard Blue... 17.50  
 26 in., Standard Blue... 18.00  
 27 in., Standard Blue... 18.50  
 28 in., Standard Blue... 19.00  
 29 in., Standard Blue... 19.50  
 30 in., Standard Blue... 20.00  
 31 in., Standard Blue... 20.50  
 32 in., Standard Blue... 21.00  
 33 in., Standard Blue... 21.50  
 34 in., Standard Blue... 22.00  
 35 in., Standard Blue... 22.50  
 36 in., Standard Blue... 23.00  
 37 in., Standard Blue... 23.50  
 38 in., Standard Blue... 24.00  
 39 in., Standard Blue... 24.50  
 40 in., Standard Blue... 25.00  
 41 in., Standard Blue... 25.50  
 42 in., Standard Blue... 26.00  
 43 in., Standard Blue... 26.50  
 44 in., Standard Blue... 27.00  
 45 in., Standard Blue... 27.50  
 46 in., Standard Blue... 28.00  
 47 in., Standard Blue... 28.50  
 48 in., Standard Blue... 29.00  
 49 in., Standard Blue... 29.50  
 50 in., Standard Blue... 30.00  
 51 in., Standard Blue... 30.50  
 52 in., Standard Blue... 31.00  
 53 in., Standard Blue... 31.50  
 54 in., Standard Blue... 32.00  
 55 in., Standard Blue... 32.50  
 56 in., Standard Blue... 33.00  
 57 in., Standard Blue... 33.50  
 58 in., Standard Blue... 34.00  
 59 in., Standard Blue... 34.50  
 60 in., Standard Blue... 35.00  
 61 in., Standard Blue... 35.50  
 62 in., Standard Blue... 36.00  
 63 in., Standard Blue... 36.50  
 64 in., Standard Blue... 37.00  
 65 in., Standard Blue... 37.50  
 66 in., Standard Blue... 38.00  
 67 in., Standard Blue... 38.50  
 68 in., Standard Blue... 39.00  
 69 in., Standard Blue... 39.50  
 70 in., Standard Blue... 40.00  
 71 in., Standard Blue... 40.50  
 72 in., Standard Blue... 41.00  
 73 in., Standard Blue... 41.50  
 74 in., Standard Blue... 42.00  
 75 in., Standard Blue... 42.50  
 76 in., Standard Blue... 43.00  
 77 in., Standard Blue... 43.50  
 78 in., Standard Blue... 44.00  
 79 in., Standard Blue... 44.50  
 80 in., Standard Blue... 45.00  
 81 in., Standard Blue... 45.50  
 82 in., Standard Blue... 46.00  
 83 in., Standard Blue... 46.50  
 84 in., Standard Blue... 47.00  
 85 in., Standard Blue... 47.50  
 86 in., Standard Blue... 48.00  
 87 in., Standard Blue... 48.50  
 88 in., Standard Blue... 49.00  
 89 in., Standard Blue... 49.50  
 90 in., Standard Blue... 50.00  
 91 in., Standard Blue... 50.50  
 92 in., Standard Blue... 51.00  
 93 in., Standard Blue... 51.50  
 94 in., Standard Blue... 52.00  
 95 in., Standard Blue... 52.50  
 96 in., Standard Blue... 53.00  
 97 in., Standard Blue... 53.50  
 98 in., Standard Blue... 54.00  
 99 in., Standard Blue... 54.50  
 100 in., Standard Blue... 55.00

**Planes and Plane Irons—**

Wood Planes—  
 Bench, first qual... 30¢ @ 30¢ @ 10¢  
 Bench, second qual... 20¢ @ 20¢ @ 10¢  
 Molding... 25¢ @ 25¢ @ 10¢  
 Bailey's (Stanley R. & L. Co.)... 35¢ @ 35¢ @ 10¢  
 Chapin-Stephens Co.:  
 Bench, First Quality... 30¢  
 Bench, Second Quality... 20¢  
 Molding and Miscellaneous... 25¢  
 Toy and German... 30¢  
 Union... 60¢

**Iron Planes—**

Bailey's (Stanley R. & L. Co.)... 35¢ @ 35¢ @ 10¢  
 Chapin's Iron Planes... 30¢ @ 30¢ @ 10¢  
 Miscellaneous Planes (Stanley R. & L. Co.)... 30¢ @ 30¢ @ 10¢  
 Union... 60¢

**Plane Irons—**

Wood Bench Plane Irons, list  
 Dec. 12, '06... 25¢  
 Buck Bros... 30¢  
 Chapin-Stephens Co... 25¢  
 Stanley R. & L. Co... 35¢  
 Union... 60¢  
 L. & J. White... 20¢ @ 20¢ @ 25¢

**Planters, Corn, Hand—**

Kohler's Eclipse... 20¢ doz. \$2.00

**Plates—**

Fellow... 10¢ @ 10¢ @ 10¢  
 Self-Sealing Plates (R. M. Co.)... 50¢  
 Co. per doz. \$2.00... 50¢

**Plies and Nippers—**

Button Pliers... 75¢ @ 75¢ @ 10¢  
 Gas Burner, per doz., 5 in., \$1.50  
 @ \$1.50; 6 in., \$1.45 @ \$1.50  
 Gas Pipe... 8 10 12 in.  
 Acme Nippers... 2.00 2.25 2.75 3.50

**Cronk & Carrier Mfg. Co.:—**

American Button... 80¢  
 Improved Button... 75¢ @ 10¢  
 Cronk's... 60¢  
 No. 80 Linemen's... 50¢  
 Stub's Pattern... 35¢  
 Combination and others... 35¢  
 Heller's Farriers' Nippers, Pincers  
 and Tools... 40¢ @ 40¢ @ 10¢  
 The Nettleton Mfg. Co. Reversible  
 Cutting Nippers... 40¢  
 P. S. & W. Timmers' Cutting Nip-  
 pers... 40¢  
 Wm. Schollhorn Co.:  
 Bernard, 33 1/2%; Elm City, 33 1/2%;  
 Paragon, 50%; Lodi, 50%;  
 Swedish Side, End and Diagonal Cut-  
 ting Pliers... 50¢  
 Utica Drop Forge & Tool Co.:  
 Pliers and Nippers, all kinds... 40¢  
 Vaughan & Bushnell Mfg. Co.:  
 Gas Burner, per doz., 5 in., \$2.50;  
 6 in., \$3.00.  
 Gas, per doz., 7 in., \$3.50; 8 in.,  
 \$3.75; 10 in., \$4.50.  
 Nippers, Horsehoes' Cutting, 40%;  
 Roof Paring... 40%

**Plumbs and Levels—**

Chapin-Stephens Co.:  
 Plumbs and Levels... 30¢ @ 30¢ @ 10¢  
 Chapin's Imp. Brass Cor... 40¢ @ 40¢ @ 10¢  
 Pocket Levels... 30¢ @ 30¢ @ 10¢  
 Extension Sights... 30¢ @ 30¢ @ 10¢  
 Machinists' Levels... 40¢ @ 40¢ @ 10¢  
 Diston's Plumbs and Levels... 60¢ @ 10¢  
 Diston's Pocket Levels... 60¢ @ 10¢  
 C. E. Jennings & Co.'s Iron, Adjust-  
 able... 40¢ @ 10¢  
 Stanley R. & L. Co... 40¢  
 Stanley's Duplex... 40¢  
 Woods' Extension... 35¢

**Poachers, Egg—**

Buffalo Steam Egg Poachers, per doz.,  
 No. 1, \$6.00; No. 2, \$9.00; No. 3,  
 \$9.00; No. 4, \$12.00... 50%

**Points, Glaziers—**

Rulk and 1-lb. papers... 10¢ @ 10¢ @ 10¢  
 14-lb. papers... 10¢ @ 10¢ @ 10¢  
 1/4-lb. papers... 10¢ @ 10¢ @ 10¢

**Pokes, Animal—**

Ft. Madison Hawkeye... 20¢ doz. \$3.50  
 Ft. Madison Western... 20¢ doz. \$4.00

**Police Goods—**

Manufacturers' Lists... 25¢ @ 25¢ @ 5¢

**Polish—Metal, Etc—**

Glasbrite, No. 2, 5 lb can (powder),  
 each, \$1.25; per doz., \$12.00; No. 2, 10 lb  
 can (cake), each, \$2.50; per doz., \$24.00.  
 Prestoline Liquid, No. 1 (1/2 pt.),  
 doz., \$5.00; No. 2 (1 qt.), \$9.00... 40¢  
 Prestoline Paste... 40¢  
 George William Hoffman:  
 U. S. Metal Polish Paste, 3 oz.  
 boxes, per doz., 50¢; per doz., \$4.50.  
 1 lb boxes, per doz., \$1.25; 1 lb  
 boxes, per doz., \$2.25.  
 U. S. Liquid, 8 oz. cans, per doz.,  
 \$1.25.  
 Barkeepers' Friend Metal Polish, per  
 doz., \$1.75.

**Stove—**

Black Eagle Benzine Paste, 5 lb cans,  
 per doz., \$10.00.  
 Black Eagle, Liquid, 1/2 pt. cans, per  
 doz., 75¢  
 Black Jack Paste, 1/2 lb cans, per doz.,  
 \$9.00.  
 Black Kid Paste, 5 lb cans, each, \$0.65  
 Ladd's Black Beauty Liquid, per  
 pint, 10¢  
 Joseph Dixon's, per gr., \$5.75... 10¢  
 Dixon's Plumbago... 10¢  
 Pireside... 10¢  
 Gem, per gr., \$4.50... 10¢  
 Japanese... 10¢  
 Jet Black... 10¢  
 Peerless Iron Enamel, 10 oz. cans,  
 per doz., \$1.50

**Wynn's Black Silk—**

Paste, cans, per doz., 5 oz., \$0.75;  
 1 lb, \$1.00; 1 lb cans, per gr., \$1.75  
 Paste, per 5 lb can... \$0.70  
 Liquid, cans, per doz., 6 oz., \$0.75;  
 1/2 pt., \$1.00; 1 pt., \$1.75  
 Steel Range Enamel, per doz., 1/4 pt.,  
 \$1.00; 1/2 pt., \$1.25.

**Poppers, Corn—**

1 qt. Square, doz. \$0.80; gro. \$3.00  
 1 qt. Round, doz. \$0.90; gro. \$3.00  
 1 1/2 qt. Square, doz. \$1.00; gro. \$3.00  
 2 qt. Square, doz. \$1.20; gro. \$3.00

**Post Hole and Tree Au-  
g-ers and Diggers—**

See also Diggers, Post Hole, &c.

**Posts, Steel—**

Steel Fence Posts, each, 5 ft., 42¢;  
 6 ft., 46¢; 6 1/2 ft., 48¢.  
 Steel Hitching Posts... each \$1.30

**Potato Parers—**

See Parers, Potato.

**Pots, Glur—**

Enameled... 35¢ @ 10¢  
 Tinned... 30¢ @ 10¢

**Powder—**

In Canisters:  
 Duck, 1 lb... each 45¢  
 Fine Sporting, 1 lb... each 75¢  
 Rifle, 1/2 lb... each 15¢  
 Rifle, 1 lb... each 25¢

**In Kegs:**

12 1/2-lb. kegs... \$3.50  
 25-lb. kegs... \$4.50  
 King's Semi-Smokeless:  
 Keg (25 lb bulk)... \$6.50  
 Half Keg (12 1/2 lb bulk)... \$3.50  
 Quarter Keg (6 1/4 lb bulk)... \$1.90  
 Case 24 (1 lb cans bulk)... \$8.50  
 Half case (1 lb cans bulk)... \$4.50  
 King's Smokeless: Shot Gun Rifle.  
 Keg (25 lb bulk)... \$12.00 \$15.00  
 Half Keg (12 1/2 lb bulk)... \$6.25 7.75  
 Quarter Keg (6 1/4 lb bulk)... 3.25 4.00  
 Case 24 (1 lb cans bulk)... 14.00 17.00  
 Half case 12 (1 lb c. bk)... 7.25 8.75  
 Robin Hood Sm'less Shot Gun... 50¢ & 25¢

**Presses—**

Fruit and Jelly  
 Enterprise Mfg. Co... 20¢ @ 25¢

**Seal Presses—**

Morrill's No. 1, per doz., \$20.00... 50%

**Pruning Hooks and Shears**

See Shears.

**Pullers, Nail—**

Cyclops... 50%  
 Miller's Falls, No. 3, per doz., \$12.00,  
 33 1/2% & 10%  
 Morrill's No. 1, Nail Puller, per doz.,  
 \$20.00... 50%  
 Pearson No. 1, Cyclone Spike Puller,  
 each \$30.00... 50%  
 Scranton, Case Lots:  
 No. 2B (large)... \$5.00  
 No. 3B (small)... \$5.00  
 Smith & Hemenway Co.:  
 Diamond B, case lots, per doz., Large,  
 \$9.00; Small, \$7.50.  
 Giant No. 1, per doz., \$19; No. 1 1/4,  
 \$16.50; No. 3, \$15.  
 Staple Pullers, Utica and Davi-  
 son... 60%  
 Parrot Tack and Stub Puller, per doz.,  
 75¢; per gro., \$6.00

**Pulleys, Single Wheel—**

Acting over Tackle,  
 doz., \$0.30 15 60 1.05  
 Hay Fork, Scissor or Solid Eye,  
 doz., 4 in., \$1.25; 5 in., \$1.55  
 Inch... 2 1/4 2 1/4  
 Hot House, doz... \$0.65 85 1.20  
 Inch... 1 1/4 1 1/4 2 1/4  
 Screw, doz... \$0.16 19 23 30  
 Inch... 1 1/4 2 1/4 2 1/4  
 Side, doz... \$0.25 40 55 60  
 Inch... 1 1/4 1 1/4 2 1/4  
 Stowell's:  
 Ceiling or End, Anti-Friction... 60¢ @ 10¢  
 Electric Light, Anti-Friction... 60¢ @ 10¢  
 Side, Anti-Friction... 60¢ @ 10¢

**Sash Pulleys—**

Common Frame: Square or  
 Round End, per doz, 1 1/4 and  
 2 in... 16¢ @ 19¢  
 Auger Mortise, no Face Plate,  
 per doz., 1 1/4 and 2 in... 17¢ @ 19¢

**Acme, No. 35... 1 1/4 in., 18 1/2¢; 2 in., 20 1/2¢**

For all-Steel, Nos. 3 and 7, 2 in... 50¢  
 Grand Rapids All Steel Noiseless... 50¢  
 Ideal... 70¢ @ 5¢  
 Niagara, No. 25, 1 1/4 in., 18 1/2¢; 2 in.,  
 20 1/2¢  
 No. 26, 1 1/4 in., 14 1/2¢; 2 in., 16 1/2¢  
 Star, No. 26, 1 1/4 in., 18 1/2¢; 2 in., 20 1/2¢  
 Tackle Blocks—See Blocks.

**Pumps—**

Cistern... 60%  
 Pitcher Spout... 75¢ @ 75¢ @ 10¢  
 Wood Pumps, Tubing, &c... 45¢ @ 50¢  
 Barnes Dbl. Acting (low list)... 40¢ @ 10¢  
 Barnes Pitcher Spout... 75¢ @ 10¢  
 Contractors' Rubber Diaphragm No. 2,  
 B. & L. Block Co... \$16.00  
 Drey Spray Pump... 75¢ @ 10¢  
 Flint & Walling's Fast Mail Hand,  
 (low list)... 55¢  
 Flint & Walling's Fast Mail (low  
 list)... 55¢  
 Flint & Walling's Tight Top Pitcher... 55¢  
 National Specialty Mfg. Co. Measur-  
 ing, Nos. 2, \$6.00; 3, \$5.50... 30%  
 Myers' Pumps (low list)... 40¢ @ 10¢  
 Myers' Power Pumps... 40¢ @ 10¢  
 Myers' Spray Pumps... 40¢ @ 10¢

**Pump Leathers—**

Plunger and Lower Valve—Per  
 gro.:  
 Inch... 2 2 1/4 2 1/4 2 1/4  
 \$2.20 2.50 2.75 3.00  
 Inch... 3 3 1/4 3 1/4 3 1/4  
 \$3.30 3.60 3.85 4.10 4.40  
 Plunger Cup Leathers—Per 100:  
 Inch... 2 1/2 3 3 1/2 4  
 \$2.75 3.85 5.00 6.00

**Punches—**

Sadders' or Drive, good...  
 doz. 50¢ @ 75¢  
 Spring, single tube, good qual-  
 ity... \$1.75 @ 2.00  
 Revolving (4 tubes) doz. \$3.50 @ 3.75

**Bemis & Call Co.'s Cast St'l Drive**

Morrill's Nos. 1AA, 1A, 1B, 1C,  
 \$15.00... 50%  
 Hercules, 1 die, each \$5.00... 40%  
 Niagara Hollow Punches... 40%  
 Niagara Solid Punches... 55¢ @ 10¢  
 Wm. Schollhorn Co.:  
 Belt and Ticket, Bernard, 33 1/2%;  
 Paragon, 50%; Lodi... 50%  
 Timmers' Hollow, P. S. & W. Co... 33 1/2%  
 Timmers' Solid, P. S. & W. Co... 50%  
 Tool, \$1.44... 50%

**Rail—Barn Door, &c.—**

Sliding Door, Painted Iron...  
 2 1/4 @ 2 1/4

**Sliding Door, Wrought Brass.**

1 1/2 in., lb., 36¢... 30%  
 Allith Mfg. Co.: Reliable Hanger  
 Cronk's: 50%

**Double Braced Steel Rail... 1/2 ft. 3 1/4**

O. N. T. Rail... 3¢  
 Hinge Rail... 39¢  
 Griffin's:  
 1/2 x 3-16 in., 1 x 3-16 in., \$3.00;  
 1/2 x 3-16 in., 3-16 in., \$3.80.  
 Hinged Hanger, 100 ft., 1 x 3-16  
 in., \$3.10; 1/2 x 3-16 in., \$3.80.  
 Lane's:  
 Hinged Track, 100 ft., 1 in., \$3.40;  
 1 1/2 in., \$3.60.  
 O. N. T. 100 ft., 1 in., \$3.00; 1 1/2  
 in., \$3.60; 1 1/2 in., \$4.00.  
 Standard, 1 1/2 in... 100 ft. \$4.00  
 Lawrence Bros.:  
 100 ft. No. 201, \$4.00; No. 202, \$4.00  
 New York, 1 x 3-16 in., 100 ft. \$3.00  
 McKinney's:  
 Hinged Hanger Rail, 100 ft., 1 1/2 in., 50¢  
 None Better... 100 ft. 3 1/4  
 Standard... 100 ft. 4¢  
 Myers' Stayon Track... 60¢ @ 10¢  
 Richards' Mfg. Co.:  
 Common, 1 x 3-16 in., \$3.00; 1 1/2 x  
 3-16, \$3.25; 1 1/2 x 3-16, \$3.50.  
 Special Hinged Hanger Rail... 60¢ @ 10¢  
 Lag Screw Rail, No. 65... 50%  
 Gauge Trolley Track, 100 ft., No. 31,  
 No. 30, 1 1/2 in., \$3.00;  
 No. 50, 1 1/2 in., \$3.00;  
 No. 61, \$3.00; 62, \$3.25; 63, \$3.50; 64,  
 \$4.00; 45, \$3.25; 46, \$3.50; 49, No. 1,  
 \$3.25; 49, No. 2, \$3.50.  
 Stowell's:  
 Cast Rail... 100 ft. 2 1/4  
 Steel Rail... 100 ft. 2 1/4  
 Wrought Bracket, 1 x 3-16 in., 100 ft. 2 1/4  
 Wrought Bracket, 1 1/2 x 5-16 in., 100 ft. 7¢  
 Swett's Hylo, 100 ft. 1 1/2  
 P. L. B. Steel Rail... 100 ft. \$3.00  
 No. 0, 1 x 3-16 in., 100 ft. \$3.00

**Rakes—**

NOTE—Many goods are sold  
 at net prices.  
 Fort Madison Red Head Lawn... \$3.25  
 Ideal Steel Garden, per doz., 12 teeth,  
 \$15.00; 14, \$16.00; 16, \$18.00... 80%  
 Jackson Lawn, 23 and 30 teeth, per  
 doz., net... \$4.25  
 Cronk's:  
 New Champion Garden, per doz., 12  
 teeth, \$15.00; 14, \$16.50; 16, \$18.50... 75%  
 Victor Garden, per doz., 12 teeth, \$15.00;  
 14, \$16.50; 16, \$18.00... 80%  
 Queen City Lawn, per doz., 20 teeth,  
 \$2.85; 21, \$3.00... net  
 Anticlog Lawn, per doz... \$4.00  
 Mellenberg Garden... 75¢ @ 10¢  
 Ideal Steel Garden, per doz., 12 teeth,  
 \$15.00; 14, \$16.00; 16, \$18.00... 80%  
 Kohler's:  
 Lawn Queen, 20-tooth... per doz. \$2.90  
 Lawn Queen, 24-tooth... per doz. \$3.00  
 Paragon, 20-tooth... per doz. \$2.70  
 Paragon, 24-tooth... per doz. \$2.75  
 Steel Garden, 14-tooth... per doz. \$2.40  
 Malleable Garden, 14-tooth, per doz...  
 \$1.75 @ 2.00

**Rasps, Horse—**

Diaston's... 75%  
 Heller Bros... 70¢ @ 70¢ @ 10¢  
 Liveright Bros' Gold Medal... 70¢ @ 70¢ @ 10¢  
 New Nicholson... 70¢ @ 70¢ @ 10¢  
 See also Files.

**Razors—**

Liana Bo-ras... 60%  
 Fox Razors, per doz., No. 82, Platina...  
 No. 41, \$20.00; No. 42, Platina...  
 \$25.00

**Red Drill... 50%**

Suberstein:  
 Carbo Magnetic, \$21.00; Griffon No.  
 65, \$13.50; Griffon, No. 00, \$12.00;  
 all other Razors, 40%

Keuffel & Esser Co.:	35%10%
Folding, Wood.....	35%10%
Folding, Steel.....	35%10%
Lufkin's Steel.....	50%10%
Lufkin's Lumber.....	60%
Stanley R. & L. Co.:	
Boxwood.....	60%
Ivory.....	45%
Miscellaneous.....	60%
Zig Zag, Pin Joint.....	40%
Zip Zag, Pin Joint.....	45%
Upon Nut Co.:	
Boxwood.....	60%10%
Ivory.....	35%10%10%

**Sash Balances—**

See Balance, Sash.

**Sash Locks—**

See Locks, Sash.

**Sash Weights—**

See Weights, Sash.

**Sausage Stuffers or Fillers**

See Stuffers or Fillers, Sausage.

**Saw Frames—**

See Frames, Saw.

**Saw Sets—See Sets, Saw.****Saw Tools—See Tools, Saw.****Saws—**

Atkins':	
Circular.....	45%
Hand.....	50%10%
Butcher Saws.....	35%
Cross Cut.....	40%
One-Man Cross Cut.....	40%
Narrow Cross Cut.....	50%
Hand, Rip and Panel.....	35%5%
Miter Box and Compass.....	40%
Mulay, Mill and Drag.....	45%
Chapin-Stephens Co.:	
Turning Saws and Frames.....	30%10%
Diamond Saw & Stamping Works:	
Sterling Kitchen Saws.....	30%10%
Disston's:	
Circular, Solid and Ins'ted Tooth.....	50%
Band, 2 to 18 in. wide.....	60%
Hand, 1/4 to 1 1/2.....	60%
Crosscuts.....	45%
Narrow Crosscuts.....	50%
Mulay, Mill and Drag.....	45%
Framed Woodsaws.....	25%
Woodsaw Blades.....	15%
Woodsaw Rods, Tinned.....	15%
Hand Saws, Nos. 12, 9, 9, 16, 1109.	
Do. 120, 76, 77, 8.....	25%
Hand Saws, Nos. 7, 107, 107 1/2, 3.....	30%
8, 10, Combination.....	30%
Compass, Key Hole, &c.....	25%
Butcher Saws and Blades.....	30%
C. E. Jennings & Co.'s:	
Back Saws.....	25%
Butcher Saws.....	30%
Compass and Key Hole Saws.....	35%5%
Framed Wood Saws.....	30%
Hand Saws.....	20%2%
Wood Saw Blades.....	35%
Millers Falls:	
Butcher Saws.....	15%10%
Star Saw Blades.....	15%10%
Massachusetts Saw Works:	
Victor Kitchen Saws.....	40%10%50%
Butcher Saws.....	35%10%
Peace & Richardson's Hand Saws.....	30%
Simonds':	
Circular Saws.....	45%
Crescent Ground Cross Cut Saws.....	30%
One-Man Cross Cut.....	40%10%
Gang Mill, Mule and Drag Saws.....	45%
Band Saws.....	25%2%
Back Saws.....	25%2%
Butcher Saws.....	30%
Hand Saws.....	25%2%
Hand Saws, Bay State Brand.....	40%
Compass, Key Hole, &c.....	25%2%
Wood Saws.....	40%7 1/2%
Wheeler, Madden & Clemens Mfg. Co.'s Cross Cut Saws.....	50%
Hack Saw Blades and Frames—	
Atkins' Hack Saw Blades A A A.....	35%
Disston's:	
Concave Blades.....	25%
Keystone Blades.....	35%
Hack Saw Frames.....	30%
Simonds' File Co.....	35%
C. E. Jennings & Co.'s:	
Hack Saw Frames, Nos. 175, 180.....	40%7 1/2%
Hack Saws, Nos. 175, 180, complete.....	40%7 1/2%
Goodell's Hack Saw Blades.....	40%10%
Griffin's Hack Saw Frames.....	35%5%10%
Griffin's Hack Saw Blades.....	35%5%10%
Star Hack Saws and Blades.....	15%10%
Sterling Hack Saw Blades.....	30%10%5%
Sterling Hack Saw Frames.....	30%10%10%
Sterling Power Hack Saw Machines.....	25%
each, No. 1, \$25.00; No. 2, \$30.00.....	10%
Victor Hack Saw Blades.....	25%
Victor Hack Saw Frames.....	40%

Barnes, No. 1, \$15.....	25%
Barnes' Scroll, Saw Blades.....	50%
Barnes' Velocipede Power Scroll Saw, without boring attachment, \$18.....	25%
with boring attachment, \$20.....	25%
Lester, complete, \$10.00.....	15%10%
Rogers, complete, \$15.00 and 15%10%	

**Scales—**

Family, Turnbull's..... 50%30%10%

**Counter:**

Hatch, Platform, 1/4 oz. to 4 lbs..... doz. \$5.50

Two Platforms, 1/4 oz. to 8 lbs..... doz. \$16.00

Union Platform, Plain \$1.70 \$1.90

Union Platform, Std. \$1.85 \$2.15

Chattillon's:

Eureka..... 25%

Favorite..... 60%

Crocker's Trip Scales..... 90%

Chicago Scale Co.:

The Little Detective..... 25 lbs 50%

Union or Family No. 2..... 60%

Portable Platform (reduced list)..... 50%

Wagon or Stock (reduced list)..... 45%

The Standard R. R. and War on..... 50%10%

**Scrapers—**

Box, 1 Handle..... doz. \$2.00 \$2.25

Box, 2 Handle..... doz. \$2.50 \$2.60

Ship..... Light, \$2.00; Heavy, \$4.50

Adjustable Box Scraper (S. R. & L. Co.), \$6.00.....	40%
Chapin-Stephens Co., Box.....	30%30%10%

**Screws—Bench and Hand**

Bench, Iron, doz., 1 in., \$2.50 \$3.00

2 1/2; 1 1/2, \$3.00 \$3.25; 1 1/4, \$3.50 \$3.75

Bench, Wood..... 20%10%10%

Hand, Wood..... 20%10%10%

R. Bliss Mfg. Co. Hand..... 20%5%10%

Chapin-Stephens Co., Hand..... 20%

Coach, Lag and Hand Rail—

Lag, Cone Point, list Oct. 1..... 75%15%

Coach, Gimlet Point, list

Oct. 1, '99..... 75%10%

Hand Rail, list Jan. 1, '91..... 70%10%75%

**Jack Screws—**

Standard List..... 75%

Millers Falls..... 50%10%10%

P. S. &amp; W..... 50%

Swett Iron Works..... 75%80%

**Machine—**

List Jan. 1, '98:

Flat or Round Head, Iron..... 50%50%10%

Brass or Bronze..... 50%50%10%

Fillister Head, Iron, Brass or Bronze..... 40%10%10%

**Set and Cap—**

Set (Iron)..... 75%10%7 1/2%

Set (Steel), net advance over

Iron..... 25%

Sq. Hd. Cap..... 70%10%7 1/2%

Hex. Hd. Cap..... 70%10%7 1/2%

Rd. Hd. Cap..... 60%7 1/2%

Fillister Hd. Cap..... 60%7 1/2%

**Wood**

List July 23, 1903:

Flat Head, Iron..... 87%45%10%

Round Head, Iron..... 85%50%10%

Flat Head, Brass..... 82%45%10%

Round Head, Brass..... 80%50%10%

Flat Head, Bronze..... 77%45%10%

Round Head, Bronze..... 75%50%10%

Drive Screws..... 87%45%10%

**Scroll Saws—**

See Saws, Scroll.

**Scythes—**

Per doz.

Grass, No. 1, Plain..... \$6.25 \$6.75

Clipper, Bronzed Webb..... \$6.50 \$7.00

No. 3 Clipper, Pol'd Webb..... \$6.75 \$7.25

No. 6 Clipper and Solid Steel..... \$7.00 \$7.50

Bush, Weed and Bramble, No. 2..... \$5.50 \$7.00

Grain, No. 1..... \$5.25 \$5.75

Bronzed Webb, No. 1..... \$5.50 \$6.00

Nos. 3 and 4 Clipper, Grain..... \$5.75 \$6.25

Solid Steel, No. 6..... \$9.25 \$9.75

**Seeders, Raisin—**

Enterprise..... 25%30%

**Sets A and Tool**

Fray's Adj. Tool Handles, Nos. 1, \$12; 2, \$18; 3, \$12; 4, \$9; 5, \$7..... 30%

C. E. Jennings &amp; Co.'s Model Tool Holders..... 30%

Millers Falls Adj. Tool Handles, No. 1, \$12; No. 4, \$12; No. 5, \$18..... 15%10%

**Garden Tool Sets**

Ft. Madison Three Plovers, Hoe, Rake and Shovel..... \$4 doz sets \$9.00

**Sets, Nail—**

Octagon..... gro. \$3.50 \$3.75

Buck Bros..... 27%5%

Cannon's Diamond Point, \$9 gro. \$12..... 27%5%

Mayhew's..... \$9 gro. \$9.40

Snell's Corrugated, Cup Pt..... \$9.40

Snell's Knurled, Cup Pt..... \$9.40

Victor Knurled Cup Pt..... \$9 gro. \$7.50

**Rivet—**

Regular list..... 75%75%10%

**Saw—**

Atkin's:

Criterion..... 40%

Adjustable..... 40%

Disston's Star, Monarch and Triumph..... 30%

Morrill's No. 1..... \$15.00

Nos. 3 and 4, Cross Cut..... \$20.00

No. 5, Mill..... \$20.00

Nos. 10, 11, 95..... \$15.00

No. 1 Old Style..... \$10.00

Special..... \$16.25

Giant Royal Cross Cut..... \$9 doz. \$8.00

Royal, Hand..... \$9 doz. \$4.50

Taintor Postive..... \$9 doz. \$6.75

**Shaving**

Fox Shaving Sets, No. 30..... \$9 doz., net, \$24.00

Smith &amp; Hemenway Co.'s..... 60%

**Sharpeners, Knife—**

Chicago Wheel &amp; Mfg. Co..... 70%

Pike Mfg. Co.:

Fast Cut Pocket Knife Hones..... \$1.50

Mounted Kitchen Sand Stone..... \$1.50

Natural Grit Carving Knife..... \$3.00

Quick Cut Emery Carving Knife Hones, \$9 doz..... \$1.50

Quick Edge Pocket Knife Hones, \$9 doz..... \$2.50

Skate..... 25%

Smith &amp; Hemenway Co., Eureka..... 20%

Shaves, Spoke—

Iron..... doz. \$1.00 \$1.25

Wood..... doz. \$1.75 \$2.25

Bailey's (Stanley R. &amp; L. Co.)..... 45%

Razor Edge (Stanley R. &amp; L. Co.)..... 55%

Iron, 50%: Wood..... 55%

Chapin-Stephens Co..... 30%30%10%

Goodell's \$9 doz. \$9.00..... 15%10%

Wood's F1 and F2..... 50%

Shears—

Cast Iron..... 7 8 9 in.

Best..... \$15.00 15.00 20.00 gro.

Good..... \$13.00 13.00 17.00 gro.

Cheap..... \$5.00 6.00 7.00 gro.

Straight Trimmers, &amp;c..... 10%

Best quality Jap..... 70%10%10%

Best quality, Nickel..... 80%10%10%

Fair quality, Jap..... 60%10%10%

Fair quality, Nickel..... 75%10%10%

Tailors' Shears.....	40%10%
Acme Cast Shears.....	40%10%
Heinrich's Tailor's Shears.....	10%
Wilkinson Shear & Cutlery Co.:	
Sheep, 1900 list.....	30%10%5%
Grass.....	50%10%
Horse or Mule.....	50%10%

**Bladders' Snips—**

Steel Blades..... 20%45%10%

Steel Laid Blades..... 40%10%10%

Forged Handles, Steel Blades, Berlin..... 50%

Heinrich's Snips..... 40%

Jennings &amp; Griffin Mfg. Co.'s 6 1/2 to 10 in..... 40%

Niagara Snips..... 40%

P. S. &amp; W. Forged Handles..... 20%

**Pruning Shears—**

Cronk's Hand Shears..... 35%5%

Cronk's Wood Handle Shears..... 35%5%

Disston's Combined Pruning Hook and Saw, \$9 doz. \$18.00..... 25%

Disston's Pruning Hook only, \$9 doz. \$12.00..... 25%

John T. Henry Mfg. Co.:





# CURRENT METAL PRICES.

The following quotations are for small lots. Wholesale prices, at which large lots only can be bought, are given elsewhere in our weekly market report.

## IRON AND STEEL—

### Bar Iron from store—

<b>Refined Iron:</b>	
1 to 1½ in. round and square.....	per lb. 2.30¢
1½ to 4 in. x ½ to 1 in.....	per lb. 2.40¢
1½ to 4 in. x ½ to 5-16.....	per lb. 2.40¢
Rods—½, 1 and 1½ round and square.....	per lb. 2.40¢
Angles:	Cts. per lb.
3 in. x ½ in. and larger.....	2.40¢
3 in. x 3-16 in. and ½ in. and 1 x ¾ 2.50¢	2.65¢
1½ to 2½ in. x ½ in.....	2.45¢
1½ to 2½ in. x 3-16 in. and thicker.....	2.40¢
1 to 1½ in. x 3-16 in.....	2.45¢
1 to 1½ in. x ½ in.....	2.50¢
¾ x ½ in.....	2.65¢
¾ x ½ in.....	2.75¢
¾ x ½ in.....	3.80¢
¾ x 3-32 in.....	4.30¢
<b>Teas:</b>	
1 in.....	2.75¢
1½ in.....	2.55¢
1½ to 2½ in.....	2.45¢
3 in. and larger.....	2.70¢
<b>Beams:</b>	
Channels, 3 in. and larger.....	2.40¢
Bands—1½ to 6 x 3-16 to No. 8.....	2.45¢
"Burden's Best" Iron, base price.....	3.00¢
Burden's "H. B. & S." Iron, base price.....	3.00¢
"Ulster".....	3.10¢
Norway Bars.....	3.60¢
Norway Shapes.....	3.80¢

### Merchant Steel from Store—

Bessemer Machinery.....	per lb. 2.10¢
Toe Calk, Tire and Sleigh Shoe.....	2.50¢@3.00¢
Best Cas. S. eel, base price in small lots.....	7¢

### Sheets from Store—

#### Black

	One Pass, C.R.	R. G.
	Soft Steel.	Cleaned.
No. 14.....	per lb. 2.95¢	3.10¢
Nos. 18 to 21.....	per lb. 3.05¢	3.10¢
No. 27.....	per lb. 3.20¢	3.50¢
No. 28.....	per lb. 3.30¢	3.60¢

### Russia, Planished, &c.

Genuine Russia, according to assort- ment.....	per lb. 11½¢@14¢
Patent Planished.....	per lb. A, 10¢; B, 9¢, net.

## Galvanized.

Nos. 14 to 16.....	per lb. 3.35¢
Nos. 22 to 24.....	per lb. 3.75¢
No. 27.....	per lb. 4.30¢
No. 28.....	per lb. 4.45¢
No. 20 and lighter 36 inches wide, 25¢ higher.	

## Tin Plates—

### American Charcoal Plates (per box.)

<b>A.A.A. Charcoal:</b>	
IC, 14 x 20.....	\$6.60
IX, 14 x 20.....	7.85
<b>A. Charcoal:</b>	
IC, 14 x 20.....	\$5.65
IX, 14 x 20.....	6.75

### American Coke Plates—Bessemer—

IC, 14 x 20.....	108 lb. \$4.65
IX, 14 x 20.....	5.65

### American Terne Plates—

IC, 20 x 23 with an 8 lb. coating.....	\$9.00
IX, 20 x 23 with an 8 lb. coating.....	11.00

### Seamless Brass Tubes—

List December 4, 1905.....	Base price 27¢.
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### Brass Tubes, Iron Pipe Sizes—

List December 4, 1905.....	Base price 27¢
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### Copper Tubes—

List December 4, 1905.....	Base price 33¢
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### Brazed Brass and Bronze Tubes—

List June 6, 1898.....	Add to List 5¢ to 9¢
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### High Brass Rods—

	Add to List 1¢ to 8¢
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### Roll and Sheet Brass—

List June 6, 1898.....	Add to List 3¢ to 5¢
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## METALS—

### Tin—

Straits Pig.....	per lb. 3 @ 43½¢
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### Copper—

Lake Ingot.....	per lb. 26 @ 36½¢
Electrolytic.....	per lb. 25½¢@36 ¢
Casting.....	per lb. 25 @ 25½¢

Sheet Copper Hot Rolled, 16 oz.....	per lb. 32½¢
Sheet Copper Cold Rolled, 1¢ per lb. advance over Hot Rolled.....	per lb. 33½¢
Sheet Copper Polished 27 in. wide and under, 1¢ advance over (old Rolled).....	per lb. 34½¢
Sheet Copper Polished over 20 in. wide, 2¢ advance over Cold Rolled.....	per lb. 36½¢
Bottoms, Pits and Flats.....	per lb. 31¢ basis
Planished Copper, 1¢ per lb. more than Polished.....	

## Spelter—

Western.....	per lb. 7½¢ @ 7¾¢
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## Zinc.

No. 9, base, casks, per lb. 1¢   Open.....	per lb. 9.65¢
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## Lead.

American Pig.....	per lb. 6¼¢@7¼¢
Bar.....	per lb. 7¼¢@7¾¢

## Solder.

½ & 1, guaranteed.....	per lb. 26 @ 26½¢
No. 1.....	per lb. 24 @ 24½¢
Refined.....	per lb. 20¼¢@21¼¢
Prices of Solder indicated by private brand vary according to composition.	

## Antimony—

Cookson.....	per lb. 25¢
Hallett.....	per lb. 24¢
Other Brands.....	22¢@23¢

## Aluminum—

No. 1 Aluminum (guaranteed over 99% pure), in ingot for remelting:	
Small lots.....	nominal.
100-lb. lots.....	nominal.

## Old Metals.

### Dealers' Purchasing Prices Paid in New York

	Cents—
Copper, Heavy and Wire.....	per lb. 19.00¢@19.50¢
Copper, Light and Bottoms.....	per lb. 17.00¢@17.50¢
Brass, Heavy.....	per lb. 18.50¢@19.00¢
Brass, Light.....	per lb. 11.50¢@11.75¢
Heavy Machine Composition.....	per lb. 17.00¢@17.50¢
Clean Brass Turnings.....	per lb. 13.00¢@13.50¢
Composition Turnings.....	per lb. 14.75¢@15.25¢
Lead, Heavy.....	per lb. 6.00¢@6.50¢
Tin Lead.....	per lb. 6.40¢@6.70¢
Zinc Scrap.....	per lb. 4.25¢@4.50¢
No. 1 Yard Wrought, Long.....	\$15.75¢@16.25
No. 1 Yard Wrought, Short.....	\$15.25¢@15.5
Wrought Pipe.....	\$12.5¢@13.00
No. 1 Machinery Cast.....	\$16.50¢@17.50
Stove Plate.....	\$14.00¢@14.50

# THE IRON AGE

The oldest paper in the world devoted to the interests of the Hardware, Iron, Machinery and Metal Trades, and a standard authority on all matters relating to those branches of industry.

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